

Colorado Department of Public Health and Environment

OPERATING PERMIT

Plains End Generating Station

Issued: April 1, 2010

Last Revised: February 14, 2012

AIR POLLUTION CONTROL DIVISION COLORADO OPERATING PERMIT

04OPJE272

FACILITY NAME: Plains End OPERATING PERMIT NUMBER

Generating Station

FACILITY ID: 0590864 ISSUE DATE: April 1, 2010 EXPIRATION DATE: April 1, 2015

MODIFICATIONS: See Appendix F of Permit

Issued in accordance with the provisions of Colorado Air Pollution Prevention and Control Act, 25-7-101 et seq. and applicable rules and regulations.

ISSUED TO: PLANT SITE LOCATION:

Plains End, LLC and Plains End II, LLC

Plains End II, LLC Plains End Generating Station

P. O. Box 1227 Arvada, CO 80001 September 20 8950 Highway 93 Arvada, CO 80007 Jefferson County

INFORMATION RELIED UPON

Operating Permit Application Received: October 7, 2008 (replaced March 24, 2004 application)

And Additional Information Received: August 4 and October 22, 2009

Nature of Business: Electrical Power Generation

Primary SIC: 4911

RESPONSIBLE OFFICIAL ALTERNATE RESPONSIBLE

Name: Matthew Wolske Name: Richard Grubb

Title: Power Plant Management Services, Title: Power Plant Management Services, LLC –

LLC – Projects General Manager Director of Project Management

Phone: (806) 829-2778 Phone: (704) 815-8021

OFFICIAL FACILITY CONTACT PERSON

Name: Tommy Arnett Title: Plant Manager Phone: (303) 215-1491

SUBMITTAL DEADLINES

Semi-Annual Monitoring Period: April 1 – September 30, October 1 – March 31

Semi-Annual Monitoring Report: Due on November 1, 2010 & May 1, 2011 & subsequent years

Annual Compliance Period: April 1 – March 31

Annual Compliance Certification: Due on May 1, 2011 and subsequent years

Note that the Semi-Annual Monitoring Reports and Annual Compliance Certifications must be received at the Division office by 5:00 p.m. on the due date. Postmarked dates will not be accepted for the purposes of determining the timely receipt of those reports/certifications.

Table of Contents:

SECT	FION I - General Activities and Summary	1
1.	Permitted Activities	
2.	Alternative Operating Scenarios	2
3.	Nonattainment Area New Source Review (NANSR) and Prevention of Significant Deterioration (PSD)	2
4.	Accidental Release Prevention Program (112(r))	2
5.	Compliance Assurance Monitoring (CAM)	
6.	Summary of Emission Units	
SECT	ΓΙΟΝ II - Specific Permit Terms	4
1.	Units E01 – E20 – Twenty (20) Natural Gas Fired Internal Combustion Engines, Each Equipped with SCR and Oxidation Catalyst (Plains End I)	
2.	Units E21 – E34 – Fourteen (14) Natural Gas Fired Internal Combustion Engines, Each Equipped with SCR and Oxidation Catalyst (Plains End II)	
3.	E035 – Emergency Generator Rated at 755 hp.	
4.	E036 – Emergency Fire-Pump, 149 hp	
5.	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60 Subpart IIII)	
6.	NSPS General Provisions	
7.	Facility Wide Requirements	42
8.	Acid Rain Program New Unit Exemption Requirements	
SECT	FION III - Permit Shield	46
1.	Specific Non-Applicable Requirements	
2.	General Conditions	
3.	Streamlined Conditions	46
SECT	FION IV - General Permit Conditions	48
1.	Administrative Changes	48
2.	Certification Requirements	48
3.	Common Provisions	48
4.	Compliance Requirements	52
5.	Emergency Provisions	53
6.	Emission Controls for Asbestos	53
7.	Emissions Trading, Marketable Permits, Economic Incentives	53
8.	Fee Payment	54
9.	Fugitive Particulate Emissions	54
10.	Inspection and Entry	54
11.	Minor Permit Modifications	54
	New Source Review	
13.	No Property Rights Conveyed	55
14.	Odor	
15.	\mathcal{E}	
16.	Opacity	55
17.	Open Burning	55
18.	Ozone Depleting Compounds	55
19.	Permit Expiration and Renewal	55
20.	Portable Sources.	56

Table of Contents:

21.	Prompt Deviation Reporting	56
	Record Keeping and Reporting Requirements	
23.		
24.	Section 502(b)(10) Changes	58
25.	Severability Clause	58
26.	Significant Permit Modifications	58
27.	Special Provisions Concerning the Acid Rain Program	58
28.	Transfer or Assignment of Ownership	
29.	Volatile Organic Compounds	59
30.	Wood Stoves and Wood burning Appliances	59
APPE	ENDIX A - Inspection Information	1
	rections to Plant	
	Sety Equipment Required	
	cility Plot Plan	
	t of Insignificant Activities	
A PPF	ENDIX B	1
	porting Requirements and Definitions	
_	onitoring and Permit Deviation Report - Part I	
	onitoring and Permit Deviation Report - Part II	
	onitoring and Permit Deviation Report - Part III	
	ENDIX Cquired Format for Annual Compliance Certification Report	
	•	
	ENDIX D	
Not	tification Addresses	1
APPE	ENDIX E	1
	mit Acronyms	
	•	
	ENDIX F	
Peri	mit Modifications	1
APPE	ENDIX G	1
Wa	artsila Engine HAP Emission Factors	1
A PPF	ENDIX H	1
	rtable Monitoring Annual Emissions Limitations Monitoring Method.	
	· ····································	, - -

SECTION I - General Activities and Summary

1. Permitted Activities

1.1 The Plains End Generating Station consists of thirty four (34) natural gas fired internal combustion engines used to generate electricity. The engines are equipped with selective catalytic reduction (SCR) to reduce NO_X emissions and oxidation catalysts to reduce CO, VOC and HAP emissions. The facility was initially constructed with twenty (20) engines, each rated at 5,650 kW, for a total capacity of 113 MW (referred to as Plains End I). A second phase to the facility was added later with fourteen (14) engines, each rated at 8,439 kW, for a capacity of 118 MW (referred to as Plains End II). In addition, there are two diesel fuel-fired internal combustion engines that drive an emergency generator and a fire pump located at the facility that are included as significant emission units in Section II of this permit.

The facility is located at 8950 Highway 93 (\sim one mile south of the intersection of Highways 93 and 72), in Arvada, which is in Jefferson County, Colorado. The area in which the plant operates is designated as attainment/maintenance for particulate matter less than 10 microns in diameter (PM₁₀). Under that classification, all SIP-approved requirements for PM₁₀ will continue to apply in order to prevent backsliding under the provisions of Section 110(l) of the Federal Clean Air Act. The area is classified as non-attainment for ozone and is part of the 8-hour Ozone Control Area as defined in Colorado Regulation No. 7, Section II.A.1.

There are no affected states within 50 miles of the facility. Rocky Mountain National Park and Eagles Nest and Rawah National Wilderness Areas, all Federal Class I designated areas, are within 100 km of the facility.

- 1.2 Until such time as this permit expires or is modified or revoked, the permittee is allowed to discharge air pollutants from this facility in accordance with the requirements, limitations, and conditions of this permit.
- 1.3 This Operating Permit incorporates the applicable requirements contained in the underlying construction permits, and does not affect those applicable requirements, except as modified during review of the application or as modified subsequent to permit issuance using the modification procedures found in Regulation No. 3, Part C. These Part C procedures meet all applicable substantive New Source Review Requirements of Part B. Any revisions made using the provisions of Regulation No. 3, Part C shall become new applicable requirements for purposes of this operating permit and shall survive reissuance. This permit incorporates the applicable requirements (except as noted in Section II) from the following construction permits: 01JE0057, 04JE1140 and 07JE1120.
- 1.4 All conditions in this permit are enforceable by US Environmental Protection Agency, Colorado Air Pollution Control Division (hereinafter Division) and its agents, and citizens unless otherwise specified. **State-only enforceable conditions are:** Permit Condition Number(s): Section IV Conditions 3.d, 3.g (last paragraph), 14 and 18 (as noted)

1.5 All information gathered pursuant to the requirements of this permit is subject to the Recordkeeping and Reporting requirements listed under Condition 22 of the General Conditions in Section IV of this permit.

2. Alternative Operating Scenarios

- 2.1 The permittee shall be allowed to make the following changes to its method of operation without applying for a revision of this permit.
 - 2.1.1 No separate operating scenarios have been specified.

3. Nonattainment Area New Source Review (NANSR) and Prevention of Significant Deterioration (PSD)

Based on the information provided by the applicant, this source is not categorized as a PSD major stationary source as of the issue date of this permit. Any future modification at this facility which is major by itself (i.e. Potential to Emit of ≥ 250 tons/year) for any pollutant listed in Regulation No. 3, Part D, Section II.A.42 for which the area is in attainment or attainment/maintenance may result in the application of the PSD review requirements.

In addition, future modifications at this facility may result in the facility being classified as a major stationary source for PSD. Once that threshold is exceeded, future modifications at this facility resulting in a significant net emissions increase (see Regulation No. 3, Part D, Section II.A.26 and 42) for any pollutant as listed in Regulation No. 3, Part D, Section II.A.42 for which the area is in attainment or attainment/maintenance may result in the application of the PSD review requirements.

- 3.2 This source is categorized as a NANSR major stationary source (Potential to Emit of VOC and $NO_X \ge 100$ tons/year). Future modifications at this facility resulting in a significant net emissions increase (see Regulation No. 3, Part D, Sections II.A.26 and 42) for VOC or NO_X or a modification which is major by itself (Potential to Emit ≥ 100 tons/year or either VOC or NO_X) may result in the application of the NANSR review requirements.
- 3.3 There are no other Operating Permits associated with this facility for purposes of determining the applicability of NANSR or PSD review regulations..

4. Accidental Release Prevention Program (112(r))

4.1 Based on the information provided by the applicant, this facility is not subject to the provisions of the Accidental Release Prevention Program (section 112(r)) of the Federal Clean Air Act.

5. Compliance Assurance Monitoring (CAM)

5.1 The following emission points at this facility use a control device to achieve compliance with an emission limitation or standard to which they are subject and have pre-control emissions that exceed or are equivalent to the major source threshold. They are therefore subject to the

Operating Permit Number: 04OPJE272 Issued: 4/1/10

provisions of the CAM program as set forth in 40 CFR Part 64, as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV:

Although the Plains End II engines have uncontrolled CO emissions above the major source level and use a control device to meet their CO emission limitations, CAM does not apply until the renewal of this permit since controlled CO emissions from a single engine are below the major source level.

Summary of Emission Units 6.

6.1 The emissions units regulated by this permit are the following:

Emission Unit Number	AIRS Stack Number	Facility Identifier	Description	Startup Date	Pollution Control Device
S01 – S020	001	E01 - E20	Twenty (20) Wartsila, Model No. 18VG34SG, Natural Gas Fired Internal Combustion Engines Driving Electric Generators, Each Engine Rated at 54.2 MMBtu/hr and 7,900 HP, Serial Nos. 21350 through 21369. Each Generator Rated at 5,650 kW.	March 2002	Selective Catalytic Reduction (SCR) for NO _X and Oxidizing Catalyst for CO, VOC and HAPS.
S021 – S034	002	E21 – E34	Fourteen (14) Wartsila, Model No. 20V34SG, Natural Gas Fired Internal Combustion Engines Driving Electric Generators, Each Engine Rated at 73.6 MMBtu/hr and 11, 352 hp, Serial Nos, PAAE063701, 063703 – 063705, 063707 – 063712, 063717, 063721, 063722 & 063726. Each Generator Rated at 8,439 kW.	April 2008	SCR for NO _X and Oxidizing Catalyst for CO, VOC and HAPS.
S035	005	E35	Cummins, Model No. QSX15-G9, Internal Combustion Engine, Serial No. 79274049 Driving a Cummins 350DFEG Electric Generator (350 kW). The Engine is Diesel Fuel-Fired and Rated at 755 hp and 3.3 MMBtu/hr. This unit is used to start the Wartsila engines when power at the facility is lost.	April 2008	Uncontrolled
S036	006	E36	John Deere, Model No. 6068TF220, Diesel Fuel-Fired Emergency Fire Pump Engine, Rated at 149 hp (9.5 gal/hr), Serial No. P6068T696483		Uncontrolled

Operating Permit Number: 04OPJE272 Issued: 4/1/10

SECTION II - Specific Permit Terms

1. Units E01 – E20 – Twenty (20) Natural Gas Fired Internal Combustion Engines, Each Equipped with SCR and Oxidation Catalyst (Plains End I)

Unless Otherwise Specified Limits are for All Engines Together

Parameter	Permit Condition	Limitations		Compliance Emission	Monitoring	
	Number	Short Term	Long Term	Factor	Method	Interval
RACT Requirements	1.1	See Co	See Condition 1.1.		See Condition 1.1.	
PM	1.2.	N/A	98.7 tons/yr	0.0303 lb/MMBtu	Recordkeeping and Calculation	Monthly
PM ₁₀		For Each Engine: 0.031 lb/MMBtu	98.7 tons/yr	0.0303 lb/MMBtu	Performance Tests	Annually
VOC		For Each Engine: 0.030 lb/MMBtu	97.2 tons/yr	0.030 lb/MMBtu		
SO ₂	1.3	N/A	2.1 tons/yr	5.88 x 10 ⁻⁴ lb/MMBtu	Recordkeeping and Calculation	Monthly
NO _X	1.4	For Each Engine: 0.030 lb/MMBtu	97.2 tons/yr	0.030 lb/MMBtu	Recordkeeping and Calculation Portable Monitoring Performance	Monthly Semi-Annually Annually
СО		N/A	89.9 tons/yr	0.028 lb/MMBtu	Tests	
HAP Emissions	1.5	Facility Wide Requirement: Emissions of Any Individual HAP Shall Not Exceed 9 tons/yr		See Condition 1.5	Recordkeeping and Calculation Portable Monitoring Performance Tests (for Formaldehyde)	Monthly Semi-Annually Annually

Operating Permit Number: 04OPJE272 Issued: 4/1/10

Parameter	Permit Condition	Lin	nitations	Compliance Emission	Monit	Monitoring	
	Number	Short Term	Long Term	Factor	Method	Interval	
Natural Gas Consumption	1.6	N/A	6,912 MMscf/yr	N/A	Recordkeeping	Monthly	
Btu Content of Natural Gas	1.7	N/A	N/A	N/A	ASTM Methods	Semi-Annually	
Control Device Requirements	1.8	N/A	N/A	N/A	See Cond	ition 1.8.	
Performance Tests	1.9	N/A	N/A	N/A	EPA Reference Methods	Annually	
Portable Monitoring	1.10	N/A	N/A	N/A	Portable Analyzer	Semi-Annually	
Oxygen Concentration in Engine Exhaust	1.11	N/A	N/A	N/A	Portable Analyzer	Semi-Annually	
Acid Rain New Unit Exemption	1.12	N/A	N/A	N/A	See Condi	tion 1.12.	
Opacity	1.13		ed 20% Except as ed for Below	N/A	Fuel Restriction	Only Natural Gas is Used as	
		for a Period or I More than Six	Not to Exceed 30%, Periods Aggregating (6) Minutes in any cutive Minutes			Fuel	
MACT Subpart ZZZZ Requirements*	1.14	ppmvd @ 159	s Not to Exceed 47 % O ₂ , based on the 3 h-hr test runs	N/A	See Condi	tion 1.14	

^{*}Note that as of the issuance date of this revised permit [February 14, 2012], the provisions in 40 CFR Part 63 Subpart ZZZZ (those provisions published in the August 20, 2010 Federal Register) have not been adopted in Colorado Regulation No. 8, Part E.

- 1.1 The engines are subject to the Reasonably Available Control Technology Requirements (RACT) for NO_X , PM_{10} and VOC emissions (Colorado Regulation No. 3, Part B, Section III.D.2.a (PM_{10}) and b (NO_X) and Colorado Regulation No. 7, Section II.C.2 (VOC)). RACT has been determined as follows:
 - 1.1.1 RACT for NO_X has been determined to be the use of selective catalytic reduction (SCR) systems on the engines (operated in accordance with the requirements in Condition 1.8) with the emission limits identified in Condition 1.4.2 (Colorado Construction Permit 01JE0057, as modified under the provisions of Section I, Condition 1.3 to replace the control device percent efficiency requirement with an outlet emission limit).

Operating Permit Number: 04OPJE272 Issued: 4/1/10

- 1.1.2 RACT for PM₁₀ has been determined to be the use of natural gas as fuel, good combustion practices and use of coalescing filters on the fuel inlet with the emission limitations identified in Condition 1.2.2 (Colorado Construction Permit 01JE0057, as modified under the provisions of Section I, Condition 1.3 to restore the RACT limit specified in the March 4, 2002 version of the construction permit).
- 1.1.3 RACT for VOC has been determined to be the use of oxidation catalysts (operated in accordance with the requirements in Condition 1.8) on the engines with the emission limitations identified in Condition 1.2.3 (Colorado Regulation No. 7, Section II.C.2).
- 1.2 PM, PM_{10} and VOC emissions are subject to the following requirements:
 - 1.2.1 **Total** Annual emissions of PM, PM₁₀ and VOC **from all engines together** shall not exceed the above limitations (Colorado Construction Permit 01JE0057). Monthly emissions from all engines together shall be calculated by the end of the subsequent month using the above emission factors (manufacturer's guarantees, VOC emission factor assumes a control efficiency of 69.8%), the monthly natural gas consumption (as required by Condition 1.6) and the Btu content of the fuel (as required by Condition 1.7) in the following equation:

tons/mo = EF (lbs/MMBtu) x natural gas use (MMscf/mo) x Btu content of gas (MMBtu/MMscf) 2000 lbs/ton

Monthly emissions shall be used in a twelve month rolling total to monitor compliance with the annual limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

- 1.2.2 For purposes of RACT, Particulate Matter less than 10 microns (PM₁₀) emissions (including condensables) **from each engine** shall not exceed 0.031 lbs/MMBtu, based on the average of three (3) test runs (Colorado Construction Permit 01JE0057, as modified under the provisions of Section I, Condition 1.3 to specify the averaging time). Compliance with the PM₁₀ RACT limits shall be monitored as follows:
 - 1.2.2.1 In the absence of credible evidence to the contrary, compliance with the PM_{10} emission limitation is presumed since only natural gas is permitted to be used as fuel in the engines.
 - 1.2.2.2 Performance tests shall be conducted annually as specified in Condition 1.9.
- 1.2.3 For purposes of RACT, VOC emissions from each engine shall not exceed 0.030 lbs/MMBtu, based on the average of three (3) test runs (Colorado Regulation No. 7, Section II.C.2). Compliance with the VOC RACT limits shall be monitored as follows:
 - 1.2.3.1 In the absence of credible evidence to the contrary, compliance with the VOC emission limitation is presumed provided the oxidation catalyst is

operated and maintained in accordance with the requirements in Condition 1.8.

- 1.2.3.2 Performance tests shall be conducted annually as specified in Condition 1.9.
- 1.3 **Total** Annual emissions of SO₂ **from all engines together** shall not exceed the above limitations (Colorado Construction Permit 01JE0057). Monthly emissions from all engines together shall be calculated by the end of the subsequent month using the above emission factors (AP-42, Section 3.2 (dated 7/00), Table 3.2-2), the monthly natural gas consumption (as required by Condition 1.6) and the Btu content of the fuel (as required by Condition 1.7) in the following equation:

tons/mo = EF (lbs/MMBtu) x natural gas use (MMscf/mo) x Btu content of gas (MMBtu/MMscf) 2000 lbs/ton

Monthly emissions shall be used in a twelve month rolling total to monitor compliance with the annual limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

- 1.4 Carbon Monoxide and Nitrogen Oxide (NO_X) emissions shall not exceed the following limitations:
 - 1.4.1 **Total** Annual CO and NO_X emissions **from all engines together** shall not exceed the above limitations (Colorado Construction Permit 01JE0057).
 - 1.4.2 For purposes of RACT, NO_X emissions **from each engine** shall not exceed the following limitations:
 - 1.4.2.1 Except as provided for below, emissions of NO_X shall not exceed 0.030 lb/MMBtu, on an hourly average (Colorado Construction Permit 01JE0057, as modified under the provisions of Section I, Condition 1.3 to replace the control efficiency limitation with an outlet emission limitation and to clarify that the limit does not apply during periods of startup and shutdown).
 - 1.4.2.2 The NO_X emission limitation in Condition 1.4.2.1 does not apply during periods of startup and shutdown; however emissions during startup and shutdown shall be included in monitoring compliance with the annual limitation in Condition 1.4.1.
 - 1.4.2.3 "Startup" means the setting in operation of any air pollution source for any purpose. Setting in operation for these engines begins when fuel is first combusted in the engine and ends when output of the engine reaches 3,390 kw (60% of rated capacity) and the inlet temperature of the catalyst reaches $572 \,^{\circ}$ F.
 - 1.4.2.4 "Shutdown" means the cessation of operation of any air pollution source for any purpose. The cessation of operation for these engines begins when

the command signal is initiated to shutdown the unit and ends when fuel is no longer being fired in the engine.

Compliance with the NO_X and CO emission limitations shall be monitored as follows:

1.4.3 Except as provided below, the emission factors listed above (manufacturer's guarantees, assumes control efficiencies of 81.4% for NO_X and 90.9% for CO) have been approved by the Division and shall be used to calculate emissions from these engines.

Monthly emissions from all engines together shall be calculated by the end of the subsequent month using the above emission factors, the natural gas consumption (as required by Condition 1.6) and the Btu content of the fuel (as required by Condition 1.7) in the following equation:

tons/mo = <u>EF (lbs/MMBtu)</u> x fuel use (<u>MMscf/mo</u>) x <u>Btu content of gas (MMBtu/mo</u>) 2000 lbs/ton

Monthly emissions shall be used in a twelve month rolling total to monitor compliance with the annual limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

If the results of the portable analyzer testing conducted under the provisions of Condition 1.4.5 show that either the NO_X or CO emission rates/factors are greater than the emission rates/factors listed above, and in the absence of subsequent testing results to the contrary (as approved by the Division), the permittee shall apply for a modification to this permit to reflect, at a minimum, the higher emission rates/factors within 60 days of the completion of the test.

- 1.4.4 Performance tests shall be conducted annually as specified in Condition 1.9.
- 1.4.5 Portable monitoring shall be conducted semi-annually as specified in Condition 1.10.
- 1.5 Facility wide emissions of any single HAP shall not exceed 9 tons/yr (as provided for in Section I, Condition 1.3 and Colorado Regulation No. 3, Part C, Sections I.A.7 and III.B.7, to include facility wide HAP limits). Compliance with the facility wide single HAP emission limitation shall be monitored as follows:
 - 1.5.1 Monthly emissions of individual HAPs from all engines together shall be calculated using the emission factors in the table below, the natural gas consumption (as required by Condition 1.6) and the Btu content of the fuel (as required by Condition 1.7) in the following equation:

tons/mo = EF (lbs/MMBtu) x fuel use (MMscf/mo) x Btu content of gas (MMBtu/mo)
2000 lbs/ton

Operating Permit Number: 04OPJE272 Issued: 4/1/10

Pollutant	Emission Factor (lb/MMBtu)	Source of Emission Factor
1,3 - butadiene	7.61 x 10 ⁻⁶	Calculated in Accordance with
Acetaldehyde	2.38 x 10 ⁻⁴	Appendix G
Acrolein	1.47 x 10 ⁻⁴	
Benzene	1.25 x 10 ⁻⁵	
Formaldehyde	1.51 x 10 ⁻³	Performance test – maximum
		test result multiplied by 1.2

Monthly emissions of individual HAPs shall be used in twelve month rolling totals of facility wide emissions as specified in Condition 7.1

If the results of the performance testing conducted under the provisions of Condition 1.5.2 indicate that formaldehyde emissions from any engine exceeds 0.0816 lbs/hr, the permittee shall apply for a modification to this permit to reflect, at a minimum, the higher HAP emission rates/factors within 60 days of the completion of the test. Revised HAP emission factors shall be calculated as specified in Appendix G of this permit.

- 1.5.2 Performance Tests shall be conducted annually as required by Condition 1.9.
- 1.5.3 The portable monitoring conducted semi-annually to verify the CO emission factor (required by Condition 1.10) shall be used as a surrogate for HAP monitoring.
- 1.6 **Total** natural gas consumption **for all engines together** shall not exceed the above limitations (Colorado Construction Permit 01JE0057). The natural gas consumption for all engines together shall be monitored and recorded monthly using the common fuel flow meter. Monthly natural gas consumption shall be summed used in a rolling twelve month total to monitor compliance with the annual limitation. Each month a new twelve month rolling total shall be calculated using the previous twelve months data.
- 1.7 The Btu content of the natural gas used to fuel these engines shall be verified semi-annually using the appropriate ASTM Methods or equivalent, if approved in advance by the Division. The Btu content of the natural gas shall be based on the lower heating value of the fuel. Calculation of monthly emissions shall be made using the heat content derived from the most recent required analysis.
- 1.8 Emissions of NO_X, CO, VOC and HAP emissions from each engine shall be controlled by SCR systems and oxidation catalysts. The engines, oxidation catalysts and SCR systems are subject to the following requirements:
 - 1.8.1 Each engine shall be operated and maintained in accordance with manufacturer's recommendations and good engineering practices. A copy of the operation and maintenance procedures, schedules for maintenance and/or inspection activities and the records related to operation and maintenance of the engines and good engineering practices, such as records of routine maintenance and/or inspections shall be made available to the Division upon request.

- 1.8.2 The oxidation catalysts and SCR systems shall be operated and maintained as follows:
 - 1.8.2.1 Except as provided for below, urea shall be injected into the SCR systems at all times the engines are operated:
 - a. Urea is not injected during periods of startup (as defined in Condition 1.4.2.3) and shutdown (as defined in Condition 1.4.3.3). The permittee shall retain record of the date, time and duration of periods of startup and shutdown for each engine.
 - b. If at any time, excluding periods of startup and shutdown, urea injection fails, the permittee shall conduct an investigation of the SCR system. If urea injection cannot be restored within ten (10) minutes, the engine shall be shutdown. Failure to shutdown the engine after ten (10) minutes without urea injection shall be considered a deviation to this Condition 1.8.2.1. Records shall be kept of any event, excluding those that occur during periods of startup and shutdown, in which urea injection fails for more than two (2) minutes while the unit is in operation.
 - 1.8.2.2 The oxidation catalysts, SCR systems and NO_X monitoring systems shall be operated and maintained in accordance with manufacturer's recommendations and good engineering practices. Good engineering practices include the following:
 - a. The source shall clean, recondition and replace the catalyst in accordance with the manufacturer's and/or packager's recommendations. Records of the catalyst cleaning, reconditioning or replacement shall be documented and made available to the Division upon request.
 - b. Maintenance and/or inspections shall be conducted in accordance with the manufacturer's and/or packager's recommendations and records of routine maintenance and/or inspections shall be retained. A copy of the operation and maintenance procedures, schedules for maintenance and/or inspection activities and the records of routine maintenance and/or inspections shall be made available to the Division upon request.
 - c. If maintenance activities or actions are dependent upon hours of operation, then engine operating hours shall be recorded and made available to the Division upon request.
- 1.8.3 Parameters associated with the oxidation catalysts and SCR systems shall be monitored as follows:
 - 1.8.3.1 The pressure drop across the oxidation catalysts shall be monitored and recorded monthly.

- 1.8.3.2 The inlet temperature to the oxidation catalysts shall be monitored and recorded daily and kept between 450 and 1350 ° F. In the event that the inlet temperature monitoring device in inoperable, the permittee shall monitor and record the exit temperature from the oxidation catalyst. The permittee shall keep records of the time periods when the inlet temperature is not recorded due to inlet temperature monitoring device inoperability and shall make such records available to the Division upon request. The inlet temperature monitoring device shall be repaired as soon as practicable.
- 1.8.3.3 The urea injection rate to each SCR system shall be monitored and recorded daily.

If the engine is not operated during a day (or calendar month), recording of the above parameters is not necessary. When portable monitoring and/or performance testing is scheduled, the above parameters shall be recorded during the portable monitoring and/or performance test event.

1.9 Performance tests shall be conducted annually, in accordance with the schedule below, to monitor compliance with the PM/PM₁₀ (including condensables), VOC, NO_X, CO and formaldehyde emission limitations. Performance tests shall be conducted using the appropriate EPA Test Methods.

Engine Group	Test Date
1, 6, 15, 17	August/September 2007, 2012, 2017
2, 7, 14, 18	August/September 2008, 2013, 2018
3, 8, 13, 19	August/September 2009, 2014, 2019
4, 9, 12, 20	August/September 2010, 2015, 2020
5, 10, 11, 16	August/September 2011, 2016, 2021

A stack testing protocol shall be submitted for Division approval at least thirty (30) calendar days prior to performance of the test required under this condition. No stack test required herein shall be performed without prior written approval of the protocol by the Division. The Division reserves the right to witness the test. In order to facilitate the Division's ability to make plans to witness the test, notice of the date (s) for the stack test shall be submitted to the Division at least thirty (30) calendar days prior to the test. The Division may for good cause shown, waive this thirty (30) day notice requirement. In instances when a scheduling conflict is presented, the Division shall immediately contact the permittee in order to explore the possibility of making modifications to the stack test schedule. The required number of copies of the compliance test results shall be submitted to the Division within forty-five (45) calendar days of the completion of the test unless a longer period is approved by the Division.

1.10 Portable Monitoring (6/1/06 version)

Emission measurements of nitrogen oxides (NO_X) and carbon monoxide (CO) from each engine shall be conducted semi-annually using a portable flue gas analyzer. At least three calendar months shall separate the semi-annual tests. Note that if an engine is operated for less than 250 hrs in any semi-annual period, then the portable monitoring requirements do not apply to that

engine. If portable monitoring is not conducted for a given engine for four consecutive semi-annual periods, portable monitoring will be required in the next semi-annual period for that engine.

All portable analyzer testing required by this permit shall be conducted using the Division's Portable Analyzer Monitoring Protocol (ver March 2006 or newer) as found on the Division's website at: http://www.cdphe.state.co.us/ap/down/portanalyzeproto.pdf

Results of the portable analyzer tests shall be used to monitor the compliance status of these units. For comparison with the hourly emission limitations, the results of the tests shall be converted to lb/MMBtu in order to monitor compliance with the hourly emission limitations. For comparison with an annual or short term (monthly) emission limit, the results of the tests shall be converted to a lb/hr basis and multiplied by the allowable operating hours in the month or year (whichever applies) in order to monitor compliance. If a source is not limited in its hours of operation the test results will be multiplied by the maximum number of hours in the month or year (8760), whichever applies. For these engines, compliance with the annual NO_X and CO emissions limitations shall be monitored in accordance with the procedure included in Appendix H of this permit.

If the portable analyzer results indicate compliance with both the NO_X and CO emission limitations, in the absence of credible evidence to the contrary, the source may certify that the engine is in compliance with both the NO_X and CO emission limitations for the relevant time period.

Subject to the provisions of C.R.S. 25-7-123.1 and in the absence of credible evidence to the contrary, if the portable analyzer results fail to demonstrate compliance with either the NO_X or CO emission limitations, the engine will be considered to be out of compliance from the date of the portable analyzer test until a portable analyzer test indicates compliance with both the NO_X and CO emission limitations or until the engine is taken offline.

For comparison with the emission rates/factors, the emission rates/factors determined by the portable analyzer tests and approved by the Division shall be converted to the same units as the emission rates/factors in the permit. If the portable analyzer tests shows that either the NO_X or CO emission rates/factors are greater than the relevant ones set forth in the permit, and in the absence of subsequent testing results to the contrary (as approved by the Division), the permittee shall apply for a modification to this permit to reflect, at a minimum, the higher emission rate/factor within 60 days of the completion of the test.

Results of all tests conducted shall be kept on site and made available to the Division upon request.

1.11 The oxygen concentration in the engine exhaust gas shall be measured and recorded **for each engine** during each portable monitoring event required by Condition 1.10 and each performance test event required by Condition 1.9.

Operating Permit Number: 04OPJE272 Issued: 4/1/10

- 1.12 These engines are exempt new units under the Acid Rain Program and as such shall meet the requirements in Condition 8 of this permit.
- 1.13 The engines are subject to the following opacity requirements:
 - 1.13.1 Except as provided for in Condition 1.13.2 below, no owner or operator of a source shall allow or cause the emission into the atmosphere of any air pollutant which is in excess of 20% opacity (Colorado Construction Permit 01JE0057 and Colorado Regulation No. 1, Section II.A.1). This opacity standard applies to **each engine**.
 - 1.13.2 No owner or operator of a source shall allow or cause to be emitted into the atmosphere any air pollutant resulting from start-up which is in excess of 30% opacity for a period or periods aggregating more than six (6) minutes in any sixty (60) consecutive minutes (Colorado Construction Permit 01JE0057 and Colorado Regulation No. 1, Section II.A.4). This opacity standard applies to **each engine**.

In the absence of credible evidence to the contrary, each engine shall be presumed to be in compliance with the above opacity requirements since only natural gas is permitted to be used as fuel in these engines.

1.14 These engines are subject to the requirements in 40 CFR Part 63 Subpart ZZZZ, "National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines", as follows:

These requirements included in this Condition 1.14 are only federally enforceable. As of the date of revised permit issuance [February 14, 2012], the requirements in 40 CFR Part 63 Subpart ZZZZ promulgated on August, 2010 have not been adopted into Colorado Regulation No. 8, Part E by the Division and are therefore not state-enforceable. In the event that the Division adopts these requirements they will become state-enforceable.

Compliance Date (§ 63.6595)

1.14.1 If you have an existing stationary SI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations and operating limitations no later than October 19, 2013. (§ 63.6595(a)(1))

Emission and Operating Limitations (§ 63.6603)

Compliance with the numerical emission limitations established in Subpart ZZZZ is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in §63.6620 and Table 4 to Subpart ZZZZ.

1.14.2 If you own or operate an existing stationary RICE located at an area source of HAP emissions, you must comply with the requirements in Table 2d to Subpart ZZZZ and the operating limitations in Table 1b and Table 2b to Subpart ZZZZ that apply to you.

Operating Permit Number: 04OPJE272 Issued: 4/1/10

(§ 63.6603(a)) The requirements in Tables 2d and 2b of Subpart ZZZZ that apply to this engine are as follows:

Emission Limits

1.14.2.1 Limit concentration of CO in the stationary RICE exhaust to 47 ppmvd at 15 percent O₂. (Subpart ZZZZ, Table 2d, item 8a)

Operating Limits

- 1.14.2.2 Maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst that was measured during the initial performance test (Subpart ZZZZ, Table 2b, item 1a); and
- 1.14.2.3 Maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F. (Subpart ZZZZ, Table 2b, item 1b)

General Requirements (§ 63.6605)

- 1.14.3 You must be in compliance with the emission limitations and operating limitations in this subpart that apply to you at all times. (§ 63.6605(a))
- 1.14.4 At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Division which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. (§ 63.6605(b))

Initial performance test and compliance demonstrations (§ 63.6612)

- 1.14.5 You must conduct any initial performance test or other initial compliance demonstration according to Tables 4 and 5 to Subpart ZZZZ that apply to you within 180 days after the compliance date that is specified for your stationary RICE in Condition 1.14.1 and according to the provisions in §63.7(a)(2). (§ 63.6612(a)) The relevant requirements from Tables 4 and 5 are included in Conditions 1.14.8 and 1.14.15.
- 1.14.6 An owner or operator is not required to conduct an initial performance test on a unit for which a performance test has been previously conducted, but the test must meet all of the conditions described in § 63.6612(b)(1) through (4). (§ 63.6612(b))

Subsequent performance tests (§ 63.6615)

1.14.7 If you must comply with the emission limitations and operating limitations, you must conduct subsequent performance tests as specified in Table 3 of Subpart ZZZZ. (§ 63.6615) As specified in Table 3 of Subpart ZZZZ subsequent performance tests shall be conducted every 8760 hours or 3 years, whichever comes first. (Subpart ZZZZ, Table 3, item 4)

Performance test methods and procedures (§ 63.6620)

- 1.14.8 You must conduct each performance test in Tables 3 and 4 of this subpart that applies to you. (§ 63.6620(a)) Frequency of performance testing (Table 3) is noted in Condition 1.14.7. As specified in Table 4 of Subpart ZZZZ, performance tests shall be conducted using the test methods specified in Table 4 of Subpart ZZZZ, as follows:
 - 1.14.8.1 Select the sampling port location and the number of traverse points. If using a control device, the sampling site must be located at the outlet of the control device. (Subpart ZZZZ, Table 4, item 3.a.i) AND
 - 1.14.8.2 Determine the O₂ concentration of the stationary RICE exhaust at the sampling port location. Measurements to determine O₂ concentration must be made at the same time and location as the measurements for CO concentration. (Subpart ZZZZ, Table 4, item 3.a.ii) AND
 - 1.14.8.3 Measure moisture content of the stationary RICE exhaust at the sampling port location. Measurements to determine moisture content must be made at the same time and location as the measurements for CO concentration. (Subpart ZZZZ, Table 4, item 3.a.iii) AND
 - 1.14.8.4 Measure CO at the exhaust of the stationary RICE. CO Concentration must be at 15 percent O₂, dry basis. Results of this test consist of the average of the three 1-hour longer runs. (Subpart ZZZA, Table 4, item 3.a.iv)
- 1.14.9 Each performance test must be conducted according to the requirements specified in Table 4 of Subpart ZZZZ. If you own or operate a non-operational stationary RICE that is subject to performance testing, you do not need to start up the engine solely to conduct the performance test. Owners and operators of a non-operational engine can conduct the performance test when the engine is started up again. (§ 63.6620(b))
- 1.14.10 You must conduct three separate test runs for each performance test required in § 63.6620, as specified in §63.7(e)(3). Each test run must last at least 1 hour. (§ 63.6620(d))
- 1.14.11 Engine load during the performance test shall be determined as specified in § 63.6620(i).

Monitoring and operating and maintenance requirements (§ 63.6625)

- 1.14.12 The continuous parameter monitoring systems for catalyst inlet temperature shall meet the requirements in § 63.6625(b).
- 1.14.13 If you operate a new, reconstructed, or existing stationary engine, you must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Condition 1.14.2.1 apply. (§ 63.6625(h))

Initial Compliance Demonstration (§ 63.6630)

- 1.14.14 You must demonstrate initial compliance with each emission and operating limitation that applies to you according to Table 5 of this subpart. (§ 63.6630(a)) Table 5 specifies the following for these engines (Subpart ZZZZ, Table 5, item 2):
 - 1.14.14.1 The average CO concentration determined from the initial performance test is less than or equal to the CO emission limitation in Condition 1.14.2.1; and
 - 1.14.14.2 You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in §63.6625(b); and
 - 1.14.14.3 You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
- 1.14.15 During the initial performance test, you must establish the operating limitation in Condition 1.14.2.2. (§ 63.6630(b))
- 1.14.16 You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in §63.6645. (§ 63.6630(c))

Monitoring and Collecting Data for Continuous Compliance (§ 63.6635)

- 1.14.17 Except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities, you must monitor continuously at all times that the stationary RICE is operating. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. (§ 63.6635(b))
- 1.14.18 You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. You must, however, use all the valid data collected during all other periods. (§ 63.6635(c))

Continuous Compliance Demonstration (§ 63.6640)

- 1.14.19 You must demonstrate continuous compliance with the emission limitation and operating limitations in Conditions 1.14.2.1 through 1.14.2.3 according to methods specified in Table 6 to this subpart. (§ 63.6640(a)) The methods specified in Table 6 for these engines are as follows (Subpart ZZZZ, Table 6, Item 10):
 - 1.14.19.1 Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO to demonstrate that your emissions remain at or below the CO concentration limit in Condition 1.14.2.1; and
 - 1.14.19.2 Collecting the catalyst inlet temperature data according to §63.6625(b); and
 - 1.14.19.3 Reducing these data to 4-hour rolling averages; and
 - 1.14.19.4 Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
 - 1.14.19.5 Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
- 1.14.20 You must report each instance in which you did not meet each emission limitation or operating limitation in Conditions 1.14.2.1 through 1.14.2.3. These instances are deviations from the emission and operating limitations in Subpart ZZZZ. These deviations must be reported according to the requirements in §63.6650. If you change your catalyst, you must reestablish the values of the operating parameters measured during the initial performance test. When you reestablish the values of your operating parameters, you must also conduct a performance test to demonstrate that you are meeting the required emission limitation applicable to your stationary RICE. (§ 63.6640(b))
- 1.14.21 You must also report each instance in which you did not meet the requirements in Condition 1.14.25 that apply to you. (§ 63.6640(a))

Notifications, Reports and Records (§ 63.6645, § 63.6650, § 63.6655, and § 63.6660

- 1.14.22 Notifications shall be submitted as required by § 63.6645(a), (g) and (h).
- 1.14.23 Reports shall be submitted as required by § 63.6650(a), (b), (c), (e) and (f).
- 1.14.24 Records shall be kept as required by § 63.6655(a), (b) and (d). Records shall be kept in the forms and for the duration specified in § 63.6660.

General Provisions (§ 63.6665)

- 1.14.25 Table 8 to this subpart shows which parts of the General Provisions in §§63.1 through 63.15 apply to you. (§ 63.6665) The requirements in Table 8 include but are not limited to the following:
 - 1.14.25.1 Prohibited activities and circumvention in § 63.4.
 - 1.14.25.2 Performance test requirements in § 63.7.
 - 1.14.25.3 Monitoring requirements in § 63.8.
 - 1.14.25.4 Notification requirements in § 63.9.
 - 1.14.25.5 Recordkeeping requirements in § 63.10.

Operating Permit Number: 04OPJE272 Issued: 4/1/10

2. Units E21 – E34 – Fourteen (14) Natural Gas Fired Internal Combustion Engines, Each Equipped with SCR and Oxidation Catalyst (Plains End II)

Unless Otherwise Specified Limits are for All Engines Together

Parameter	Permit Condition	Limitations		Compliance Emission	Monitoring	
	Number	Short Term	Long Term	Factor	Method	Interval
RACT Requirements	2.1	See Co	See Condition 2.1.		See Condition 2.1.	
PM	2.2.	N/A	145.9tons/yr	0.0355 lb/MMBtu	Recordkeeping and Calculation	Monthly
PM ₁₀		For Each Engine: 0.0355 lb/MMBtu	145.9 tons/yr	0.0355 lb/MMBtu	Performance Tests	Annually
VOC		N/A	135.4 tons/yr	0.033 lb/MMBtu		
SO_2	2.3	N/A	2.4 tons/yr	5.88 x 10 ⁻⁴ lb/MMBtu	Recordkeeping and Calculation	Monthly
NO_X	2.4	For Each Engine: 0.0203 lb/MMBtu	83.3 tons/yr	0.0203 lb/MMBtu	Recordkeeping and Calculation Portable Monitoring Performance	Monthly Semi-Annually Annually
СО		N/A	135.4 tons/yr	0.033 lb/MMBtu	Tests	' immun'y
HAP Emissions	2.5	Facility Wide Requirement: Emissions of Any Individual HAP Shall Not Exceed 9 tons/yr		See Condition 2.5	Recordkeeping and Calculation Portable Monitoring Performance Tests (for Formaldehyde)	Monthly Semi-Annually Annually
Natural Gas Consumption	2.6	N/A	8,765 MMscf/yr	N/A	Recordkeeping	Monthly

Operating Permit Number: 04OPJE272 Issued: 4/1/10

Parameter	Permit Condition	Limitations		Compliance Emission	Monito	oring
	Number	Short Term	Long Term	Factor	Method	Interval
Btu Content of Natural Gas	2.7	N/A	N/A	N/A	ASTM Methods	Semi-Annually
Control Device Requirements	2.8	N/A	N/A	N/A	See Condi	tion 2.8.
Performance Tests	2.9	N/A	N/A	N/A	EPA Reference Methods	Annually
Portable Monitoring	2.10	N/A	N/A	N/A	Portable Analyzer	Semi-Annually
Oxygen Concentration in Engine Exhaust	2.11	N/A	N/A	N/A	Portable Analyzer	Semi-Annually
Acid Rain New Unit Exemption	2.12	N/A	N/A N/A		See Condition 2.12.	
NSPS Subpart JJJJ Requirements*	2.13	For Each Engine: NO _X - 2.0 g/hp-hr or 160 ppmvd @ 15% O ₂ CO – 4.0 g/hp-hr or 540 ppmvd @ 15% O ₂ VOC – 1.0 g/hp-hr or 86 ppmvd @ 15% O ₂		N/A	Performance Tests	Every 8,760 hours of operation or 3 years, whichever comes first
MACT Subpart ZZZZ Requirements*	2.14	Compliance with MACT met by complying with NSPS Subpart JJJJ		N/A	See Condi	tion 2.14
Opacity	2.15	Not to Exceed 20% Except as Provided for Below		N/A	Fuel Restriction	Only Natural Gas is Used as
		for a Period or I More than Six	Not to Exceed 30%, Periods Aggregating (6) Minutes in any cutive Minutes			Fuel

^{*}Note that as of the issuance date of this revised permit [February 14, 2012], the provisions in 40 CFR Part 60 Subpart JJJJ and 40 CFR Part 63 Subpart ZZZZ (those provisions published in the January 18, 2008 Federal Register) have not been adopted in Colorado Regulation No. 6, Part A and Colorado Regulation No. 8, Part E.

2.1 The engines are subject to the Reasonably Available Control Technology Requirements (RACT) for NO_X, PM₁₀ and VOC emissions (Colorado Regulation No. 3, Part B, Section III.D.2.a (PM₁₀) and b (NO_X) and Colorado Regulation No. 7, Section II.C.2 (VOC)). RACT has been determined as follows:

Operating Permit Number: 04OPJE272 Issued: 4/1/10

- 2.1.1 RACT for NO_X has been determined to be the use of SCR systems on the engines (operated in accordance with the requirements in Condition 2.8) with the emission limits identified in Condition 2.4.2 (Colorado Construction Permit 04JE1140, as modified under the provisions of Section I, Condition 1.3 to replace the control device percent efficiency requirement with an outlet emission limit and specify that the control requirements meet RACT).
- 2.1.2 RACT for PM₁₀ has been determined to be the use of natural gas as fuel, good combustion practices and use of coalescing filters on the fuel inlet with the emission limitations identified in Condition 2.2.2 (Colorado Regulation No. 3, part B, Section III.D.2.a).
- 2.1.3 RACT for VOC has been determined to be the use of oxidation catalysts (operated in accordance with the requirements in Condition 2.8) on the engines (Colorado Construction Permit 04JE1140, as modified under the provisions of Section I, Condition 1.3 to specify that the control requirements meet RACT).
- 2.2 PM, PM₁₀ and VOC emissions are subject to the following requirements:
 - 2.2.1 **Total** Annual emissions of PM, PM₁₀ and VOC **from all engines together** shall not exceed the above limitations (Colorado Construction Permit 04JE1140). Monthly emissions from all engines together shall be calculated by the end of the subsequent month using the above emission factors (manufacturer's guarantees, VOC emission factor assumes a control efficiency of 69.8%), the monthly natural gas consumption (as required by Condition 2.6) and the Btu content of the fuel (as required by Condition 2.7) in the following equation:

 $tons/mo = \underbrace{EF (lbs/MMBtu) \ x \ natural \ gas \ use \ (MMscf/mo) \ x \ Btu \ content \ of \ gas \ (MMBtu/MMscf)}_{2000 \ lbs/ton}$

Monthly emissions shall be used in a twelve month rolling total to monitor compliance with the annual limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

- 2.2.2 For purposes of RACT, Particulate Matter less than 10 microns (PM₁₀) emissions (including condensables) **from each engine** shall not exceed 0.0355 lbs/MMBtu, based on the average of three (3) test runs (Colorado Regulation No. 3, Part B, Section III.D.2.a). Compliance with the PM₁₀ RACT limits shall be monitored as follows:
 - 2.2.2.1 In the absence of credible evidence to the contrary, compliance with the PM_{10} emission limitation is presumed since only natural gas is permitted to be used as fuel in the engines.
 - 2.2.2.2 Performance tests shall be conducted annually as specified in Condition 2.9.

2.3 **Total** Annual emissions of SO₂ **from all engines together** shall not exceed the above limitations (Colorado Construction Permit 04JE1140). Monthly emissions from all engines together shall be calculated by the end of the subsequent month using the above emission factors (AP-42, Section 3.2 (dated 7/00), Table 3.2-2), the monthly natural gas consumption (as required by Condition 2.6) and the Btu content of the fuel (as required by Condition 2.7) in the following equation:

tons/mo = EF (lbs/MMBtu) x natural gas use (MMscf/mo) x Btu content of gas (MMBtu/MMscf)
2000 lbs/ton

Monthly emissions shall be used in a twelve month rolling total to monitor compliance with the annual limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

- 2.4 Carbon Monoxide and Nitrogen Oxide (NO_X) emissions shall not exceed the following limitations:
 - 2.4.1 **Total** Annual CO and NO_X emissions **from all engines together** shall not exceed the above limitations (Colorado Construction Permit 04JE0057).
 - 2.4.2 For purposes of RACT, NO_X emissions **from each engine** shall not exceed the following limitations:
 - 2.4.2.1 Except as provided for below, emissions of NO_X shall not exceed 0.0203 lb/MMBtu, on an hourly average (Colorado Construction Permit 04JE1140, as modified under the provisions of Section I, Condition 1.3 to replace the control efficiency limitation with an outlet emission limitation and specify that the control requirements meet RACT and to clarify that the limit does not apply during periods of startup and shutdown).
 - 2.4.2.2 The NO_X emission limitation in Condition 2.4.2.1 does not apply during periods of startup and shutdown; however emissions during startup and shutdown shall be included in monitoring compliance with the annual limitation in Condition 2.4.1.
 - 2.4.2.3 "Startup" means the setting in operation of any air pollution source for any purpose. Setting in operation for these engines begins when fuel is first combusted in the engine and ends when output of the engine reaches 4,129 kw (50% of rated capacity) and the inlet temperature of the catalyst reaches 572 ° F.
 - 2.4.2.4 "Shutdown" means the cessation of operation of any air pollution source for any purpose. The cessation of operation for these engines begins when the command signal is initiated to shutdown the unit and ends when fuel is no longer being fired in the engine.

Compliance with the NO_X and CO emission limitations shall be monitored as follows:

2.4.3 Except as provided below, the emission factors listed above (manufacturer's guarantees, assumes control efficiencies of 81.4% for NO_X and 93% for CO) have been approved by the Division and shall be used to calculate emissions from these engines.

Monthly emissions from all engines together shall be calculated by the end of the subsequent month using the above emission factors, the natural gas consumption (as required by Condition 2.6) and the Btu content of the fuel (as required by Condition 2.7) in the following equation:

tons/mo = EF (lbs/MMBtu) x fuel use (MMscf/mo) x Btu content of gas (MMBtu/mo) 2000 lbs/ton

Monthly emissions shall be used in a twelve month rolling total to monitor compliance with the annual limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

If the results of the portable analyzer testing conducted under the provisions of Condition 2.4.5 show that either the NO_X or CO emission rates/factors are greater than the emission rates/factors listed above, and in the absence of subsequent testing results to the contrary (as approved by the Division), the permittee shall apply for a modification to this permit to reflect, at a minimum, the higher emission rates/factors within 60 days of the completion of the test.

- 2.4.4 Performance tests shall be conducted annually as specified in Condition 2.9.
- 2.4.5 Portable monitoring shall be conducted semi-annually as specified in Condition 2.10.
- 2.5 Facility wide emissions of any single HAP shall not exceed 9 tons/yr (as provided for in Section I, Condition 1.3 and Colorado Regulation No. 3, Part C, Sections I.A.7 and III.B.7, to include facility wide HAP limits). Compliance with the facility wide single HAP emission limitation shall be monitored as follows:
 - 2.5.1 Monthly emissions of individual HAPS from all engines together shall be calculated using the emission factors in the table below, the natural gas consumption (as required by Condition 2.6) and the Btu content of the fuel (as required by Condition 2.7) in the following equation:

tons/mo = EF (lbs/MMBtu) x fuel use (MMscf/mo) x Btu content of gas (MMBtu/mo) 2000 lbs/ton

Pollutant	Emission Factor (lb/MMBtu)	Source of Emission Factor
1,3 - butadiene	4.95 x 10 ⁻⁶	Calculated in Accordance with
Acetaldehyde	1.55 x 10 ⁻⁴	Appendix G
Acrolein	9.52 x 10 ⁻⁵	
Benzene	8.15 x 10 ⁻⁶	

Operating Permit Number: 04OPJE272 Issued: 4/1/10

Pollutant	Emission Factor (lb/MMBtu)	Source of Emission Factor	
Formaldehyde	9.78 x 10 ⁻⁴	Performance test – average test	
		result multiplied by 5	

Monthly emissions of individual HAPs shall be used in a twelve month rolling total of facility wide emissions as specified in Condition 7.1

If the results of the performance testing conducted under the provisions of Condition 2.5.2 indicate that formaldehyde emissions from any engine exceed 0.072 lbs/hr, the permittee shall apply for a modification to this permit to reflect, at a minimum, the higher HAP emission rates/factors within 60 days of the completion of the test. Revised HAP emission factors shall be calculated as specified in Appendix G of this permit.

- 2.5.2 Performance Tests shall be conducted annually as required by Condition 2.9.
- 2.5.3 The portable monitoring conducted semi-annually to verify the CO emission factor (required by Condition 2.10) shall be used as a surrogate for HAP monitoring.
- 2.6 **Total** natural gas consumption **for all engines together** shall not exceed the above limitations (Colorado Construction Permit 04JE1140). The natural gas consumption for all engines together shall be monitored and recorded monthly using the common fuel flow meter. Monthly natural gas consumption shall be used in a rolling twelve month total to monitor compliance with the annual limitation. Each month a new twelve month rolling total shall be calculated using the previous twelve months data.
- 2.7 The Btu content of the natural gas used to fuel these engines shall be verified semi-annually using the appropriate ASTM Methods or equivalent, if approved in advance by the Division. The Btu content of the natural gas shall be based on the lower heating value of the fuel. Calculation of monthly emissions shall be made using the heat content derived from the most recent required analysis.
- 2.8 Emissions of NO_X, CO, VOC and HAP emissions from each engine shall be controlled by SCR systems and oxidation catalysts. The engines, oxidation catalysts and SCR systems are subject to the following requirements:
 - 2.8.1 Each engine shall be operated and maintained in accordance with manufacturer's recommendations and good engineering practices. A copy of the operation and maintenance procedures, schedules for maintenance and/or inspection activities and the records related to operation and maintenance of the engines and good engineering practices, such as records of routine maintenance and/or inspections shall be made available to the Division upon request.
 - 2.8.2 The oxidation catalysts and SCR systems shall be operated and maintained as follows:

- 2.8.2.1 Except as provided for below, urea shall be injected into the SCR systems at all times the engines are operated:
 - a. Urea is not injected during periods of startup (as defined in Condition 2.4.2.3) and shutdown (as defined in Condition 2.4.3.3). The permittee shall retain record of the date, time and duration of periods of startup and shutdown for each engine.
 - b. If at any time, excluding periods of startup and shutdown, urea injection fails, the permittee shall conduct an investigation of the SCR system. If urea injection cannot be restored within ten (10) minutes, the engine shall be shutdown. Failure to shutdown the engine after ten (10) minutes without urea injection shall be considered a deviation to this Condition 2.8.2.1. Records shall be kept of any event, excluding those that occur during periods of startup and shutdown, in which urea injection fails for more than two (2) minutes.
- 2.8.2.2 The oxidation catalysts, SCR systems and NO_X monitoring systems shall be operated and maintained in accordance with manufacturer's recommendations and good engineering practices. Good engineering practices include the following:
 - a. The source shall clean, recondition and replace the catalyst in accordance with the manufacturer's and/or packager's recommendations. Records of the catalyst cleaning, reconditioning or replacement shall be documented and made available to the Division upon request.
 - b. Maintenance and/or inspections shall be conducted in accordance with the manufacturer's and/or packager's recommendations and records of routine maintenance and/or inspections shall be retained. A copy of the operation and maintenance procedures, schedules for maintenance and/or inspection activities and the records of routine maintenance and/or inspections shall be made available to the Division upon request.
 - c. If maintenance activities or actions are dependent upon hours of operation, then engine operating hours shall be recorded and made available to the Division upon request.
- 2.8.3 Parameters associated with the oxidation catalysts and SCR systems shall be monitored as follows:
 - 2.8.3.1 The pressure drop across the oxidation catalysts/SCR systems shall be monitored and recorded monthly.
 - 2.8.3.2 The inlet temperature to the oxidation catalysts/SCR systems shall be monitored and recorded daily and kept between 450 and 1350 ° F. In the

event that the inlet temperature monitoring device in inoperable, the permittee shall monitor and record the exit temperature from the oxidation catalysts/SCR systems. The permittee shall keep records of the time periods when the inlet temperature is not recorded due to inlet temperature monitoring device inoperability and shall make such records available to the Division upon request. The inlet temperature monitoring device shall be repaired as soon as practicable.

2.8.3.3 The urea injection rate to each SCR system shall be monitored and recorded daily.

If the engine is not operated during a day (or calendar month), recording of the above parameters is not necessary. When portable monitoring and/or performance testing is scheduled, the above parameters shall be recorded during the portable monitoring and/or performance test event.

2.9 Performance tests shall be conducted annually, in accordance with the schedule below, to monitor compliance with the PM/PM₁₀ (including condensables), VOC, NO_X, CO and formaldehyde emission limitations. Performance tests shall be conducted using the appropriate EPA Test Methods.

Engine Group	Test Date
1, 4, 7, 10	March/April 2009, 2012, 2015, 2018
2, 5, 8, 11, 13	March/April 2010, 2013, 2016, 2019
3, 6, 9, 12, 14	March/April 2011, 2014, 2017, 2020

A stack testing protocol shall be submitted for Division approval at least thirty (30) calendar days prior to performance of the test required under this condition. No stack test required herein shall be performed without prior written approval of the protocol by the Division. The Division reserves the right to witness the test. In order to facilitate the Division's ability to make plans to witness the test, notice of the date(s) for the stack test shall be submitted to the Division at least thirty (30) calendar days prior to the test. The Division may for good cause shown, waive this thirty (30) day notice requirement. In instances when a scheduling conflict is presented, the Division shall immediately contact the permittee in order to explore the possibility of making modifications to the stack test schedule. The required number of copies of the compliance test results shall be submitted to the Division within forty-five (45) calendar days of the completion of the test unless a longer period is approved by the Division.

2.10 Portable Monitoring (6/1/06 version)

Emission measurements of nitrogen oxides (NO_X) and carbon monoxide (CO) from each engine shall be conducted semi-annually using a portable flue gas analyzer. At least three calendar months shall separate the semi-annual tests. Note that if an engine is operated for less than 250 hrs in any semi-annual period, then the portable monitoring requirements do not apply to that engine. If portable monitoring is not conducted for a given engine for four consecutive semi-annual periods, portable monitoring will be required in the next semi-annual period for that engine.

All portable analyzer testing required by this permit shall be conducted using the Division's Portable Analyzer Monitoring Protocol (ver March 2006 or newer) as found on the Division's website at: http://www.cdphe.state.co.us/ap/down/portanalyzeproto.pdf

Results of the portable analyzer tests shall be used to monitor the compliance status of these units. For comparison with the hourly emission limitations, the results of the tests shall be converted to lb/MMBtu and either g/hp-hr or corrected to 15% O_2 in order to monitor compliance with the hourly emission limitations. For comparison with an annual or short term (monthly) emission limit, the results of the tests shall be converted to a lb/hr basis and multiplied by the allowable operating hours in the month or year (whichever applies) in order to monitor compliance. If a source is not limited in its hours of operation the test results will be multiplied by the maximum number of hours in the month or year (8760), whichever applies. For these engines, compliance with the annual NO_X and CO emissions limitations shall be monitored in accordance with the procedure included in Appendix H of this permit.

If the portable analyzer results indicate compliance with both the NO_X and CO emission limitations, in the absence of credible evidence to the contrary, the source may certify that the engine is in compliance with both the NO_X and CO emission limitations for the relevant time period.

Subject to the provisions of C.R.S. 25-7-123.1 and in the absence of credible evidence to the contrary, if the portable analyzer results fail to demonstrate compliance with either the NO_X or CO emission limitations, the engine will be considered to be out of compliance from the date of the portable analyzer test until a portable analyzer test indicates compliance with both the NO_X and CO emission limitations or until the engine is taken offline.

For comparison with the emission rates/factors, the emission rates/factors determined by the portable analyzer tests and approved by the Division shall be converted to the same units as the emission rates/factors in the permit. If the portable analyzer tests shows that either the NO_X or CO emission rates/factors are greater than the relevant ones set forth in the permit, and in the absence of subsequent testing results to the contrary (as approved by the Division), the permittee shall apply for a modification to this permit to reflect, at a minimum, the higher emission rate/factor within 60 days of the completion of the test.

Results of all tests conducted shall be kept on site and made available to the Division upon request.

- 2.11 The oxygen concentration in the engine exhaust gas shall be measured and recorded **for each engine** during each portable monitoring event required by Condition 2.10 and each performance test event required by Condition 2.9.
- 2.12 These engines are exempt new units under the Acid Rain Program and as such shall meet the requirements in Condition 8 of this permit.

2.13 These engines are subject to the requirements in 40 CFR Part 60 Subpart JJJJ, "Standards of Performance for Stationary Spark Ignition Internal Combustion Engines", including but not limited to the following requirements:

Note that as of the date of revised permit issuance [February 14, 2012], the requirements in 40 CFR Part 60 Subpart JJJJ have not been adopted into Colorado Regulation No. 6, Part A by the Division and are therefore not state-enforceable. In the event that the Division adopts these requirements, these requirements will become both state and federally enforceable.

What emission standards must I meet if I am an owner or operator of a stationary SI internal combustion engine? (§ 60.4233)

Owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must comply with the emission standards in Table 1 to this subpart for their stationary SI ICE. For owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 100 HP (except gasoline and rich burn engines that use LPG) manufactured prior to January 1, 2011 that were certified to the certification emission standards in 40 CFR part 1048 applicable to engines that are not severe duty engines, if such stationary SI ICE was certified to a carbon monoxide (CO) standard above the standard in Table 1 to this subpart, then the owners and operators may meet the CO certification (not field testing) standard for which the engine was certified. (§ 60.4233(e))

The specific emission limitations in Table 1 that apply to these engines are shown in the table below:

Engine Type and Fuel: Non-Emergency SI Natural Gas and Non-Emergency SI Lean Burn LPG							
(except lean burn $500 \ge hp < 1,350$)							
Maximum Engine Power: ≥ 500 hp							
Manufacturer Date: July 1, 2007							
Emission Standards (g/hp-hr)		Emission Standards (ppmvd at 15% O ₂)					
NO_X	CO	VOC	NO_X	CO	VOC		
2.0	4.0	1.0	160	540	86		

How long must I meet the emission standards if I am an owner or operator of a stationary SI internal combustion engine? (§ 60.4234)

2.13.2 Owners and operators of stationary SI ICE must operate and maintain stationary SI ICE that achieve the emission standards as required in §60.4233 over the entire life of the engine.

What are my compliance requirements if I am an owner or operator of a stationary SI internal combustion engine? (§ 60.4243)

Operating Permit Number: 04OPJE272 Issued: 4/1/10

2.13.3 If you are an owner or operator of a stationary SI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance. (§ 60.4243(b)(2)(ii))

The performance testing required by Condition 2.10 may be used to fulfill the above performance testing requirements provided the tests are conducted in accordance with the requirements in 40 CFR Part 60 Subpart A § 60.8 and Subpart JJJJ § 60.4244 and the engine has not been operated for 8,760 hours or more in the three year period.

In addition to the above performance tests, the compliance with the NO_X and CO emission limitations shall be monitored by conducting portable monitoring semi-annually in accordance with the requirements in Condition 2.10.

What test methods and other procedures must I use if I am an owner or operator of a stationary SI internal combustion engine? (§ 60.4244)

2.13.4 Owners and operators of stationary SI ICE who conduct performance tests must follow the procedures § 60.4244.

What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine? (§ 60.4245)

- 2.13.5 Owners and operators of all stationary SI ICE must keep records of the following information:
 - 2.13.5.1 All notifications submitted to comply with this subpart and all documentation supporting any notification. (§ 60.4245(a)(1))
 - 2.13.5.2 Maintenance conducted on the engine. (§ 60.4245(a)(2))
 - 2.13.5.3 If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to \$60.4243(a)(2), documentation that the engine meets the emission standards. (\$ 60.4245(a)(4))
- Owners and operators of stationary SI ICE greater than or equal to 500 HP that have not been certified by an engine manufacturer to meet the emission standards in §60.4231 must submit an initial notification as required in §60.7(a)(1). The notification must include the information in paragraphs (c)(1) through (5) of this section. (§ 60.4245(c))

Operating Permit Number: 04OPJE272 Issued: 4/1/10

2.13.7 Owners and operators of stationary SI ICE that are subject to performance testing must submit a copy of each performance test as conducted in §60.4244 within 60 days after the test has been completed. (§ 60.4245(d))

What parts of the General Provisions apply to me? (§ 60.4246)

Table 3 to this subpart shows which parts of the General Provisions in §§60.1 through 60.19 apply to you. (§ 60.4246)

The relevant general provisions are included in Conditions 6.1 and 6.2 of this permit.

2.14 These engines are subject to the requirements in 40 CFR Part 63 Subpart ZZZZ, "National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines", as follows:

Note that as of the date of revised permit issuance [February 14, 2012], the requirements in 40 CFR Part 63 Subpart ZZZZ (those provisions published in the January 18, 2008 Federal Register) have not been adopted into Colorado Regulation No. 8, Part E by the Division and are therefore not state-enforceable. In the event that the Division adopts these requirements, these requirements will become both state and federally enforceable.

An affected source that is a new or reconstructed stationary RICE located at an area source must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart JJJJ. No further requirements apply for such engines under this part. (§ 63.6590(c)(1))

- 2.15 The engines are subject to the following opacity requirements:
 - 2.15.1 Except as provided for in Condition 2.15.2 below, no owner or operator of a source shall allow or cause the emission into the atmosphere of any air pollutant which is in excess of 20% opacity (Colorado Construction Permit 04JE1140 and Colorado Regulation No. 1, Section II.A.1). This opacity standard applies to **each engine**.
 - 2.15.2 No owner or operator of a source shall allow or cause to be emitted into the atmosphere any air pollutant resulting from start-up which is in excess of 30% opacity for a period or periods aggregating more than six (6) minutes in any sixty (60) consecutive minutes (Colorado Construction Permit 04JE1140 and Colorado Regulation No. 1, Section II.A.4). This opacity standard applies to **each engine**.

In the absence of credible evidence to the contrary, each engine shall be presumed to be in compliance with the above opacity requirements since only natural gas is permitted to be used as fuel in these engines.

Operating Permit Number: 04OPJE272 Issued: 4/1/10

3. E035 – Emergency Generator Rated at 755 hp

Parameter	Permit	Limitations		Compliance	Monitoring	
	Condition Number	Short Term	Long Term	Emission Factor	Method	Interval
NO_X	3.1	N/A	3.62 tons/yr	0.298 lbs/gal	Recordkeeping	Monthly
CO			0.50 tons/yr	0.0411 lb/gal	and Calculation	
SO ₂	3.2	0.8 lbs/MMBtu		N/A	Fuel Restriction	See Condition 3.2.
Diesel Fuel Consumption	3.3	N/A	24,300 gal/yr	N/A	Calculation	Monthly
Hours of Operation	3.4	N/A	N/A	N/A	Recordkeeping	Monthly
Opacity 3.5		Not to Exceed 20% Except as Provided for Below		N/A	EPA Method 9 Annually	Annually
		For Startup – Not to Exceed 30%, for a Period or Periods Aggregating More than Six (6) Minutes in any 60 Consecutive Minutes		N/A		
NSPS Subpart IIII Requirements	3.6	$NO_X + NMHC - 4.8 \text{ g/hp-hr}$ CO - 2.6 g/hp-hr PM - 0.15 g/hp-hr		N/A	See Condition 3.6.	
MACT Subpart ZZZZ Requirements*	3.7	Compliance with MACT met by complying with NSPS Subpart IIII		N/A	See Condition 3.7	

^{*}Note that as of the issuance date of this revised permit [February 14, 2012], the provisions in 40 CFR Part 63 Subpart ZZZZ (those provisions published in the January 18, 2008 Federal Register) have not been adopted in Colorado Regulation No. 8, Part E.

Nitrogen Oxide (NO_X) and Carbon Monoxide (CO) emissions from this engine shall not exceed the above limitations (Colorado Construction Permit 07JE1120, as modified under the provisions of Section I, Condition 1.3, to include CO emission limitations and to revise NO_X emission limit based on requested emissions indicated on the APEN submitted October 7, 2008 with the Title V permit application). Compliance with the emission limitations shall be monitored by calculating emissions monthly using the emission factors listed above (NO_X) from manufacturer, CO NSPS limit both converted to lb/gal by multiplying g/hp-hr rate by maximum hp (755) and dividing by max fuel rate (24.3 gal/hr)).

Monthly emissions shall be calculated by the end of the subsequent month, using the above emissions factor and the monthly diesel fuel consumption (as required by Condition 3.3) in the following equation.

tons/mo = EF (lbs/10³ gal) x diesel fuel consumption (gal/mo) 2000 lbs/ton

Operating Permit Number: 04OPJE272 Issued: 4/1/10

Monthly emissions shall be used in a twelve month rolling total to monitor compliance with the annual limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

- 3.2 Sulfur Dioxide (SO₂) emissions shall not exceed 0.8 lbs/mmBtu (Colorado Regulation No. 1 Section VI.B.4.b.(i)). In the absence of credible evidence to the contrary, compliance with the SO₂ limitation shall be presumed since only diesel fuel that meets the sulfur limitations in Conditions 5.14 and 5.1.5 is permitted to be used as fuel in this engine.
- 3.3 Consumption of Diesel Fuel shall not exceed the above limitation (Colorado Construction Permit 07JE1120). Compliance with the limitation shall be monitored by determining monthly fuel consumption from the engine by the end of the subsequent month. Monthly fuel consumption shall be determined by multiplying the maximum hourly fuel consumption rate of the engine (24.3 gallons/hr) by the hours the engine was operated in the month.

Monthly fuel consumption shall be used in a twelve month rolling total to monitor compliance with the annual limitation. Each month a new twelve month total shall be calculated using the previous twelve months data.

- 3.4 Hours of operation shall be recorded monthly and used to calculate the monthly fuel consumption as required by Condition 3.3.
- 3.5 Opacity of emissions shall not exceed the following:
 - 3.5.1 Except as provided for in Condition 3.5.2 below, no owner or operator of a source shall allow or cause the emission into the atmosphere of any air pollutant which is in excess of 20% opacity (Colorado Construction Permit 07JE1120 and Colorado Regulation No. 1, Section II.A.1).
 - No owner or operator of a source shall allow or cause to be emitted into the atmosphere any air pollutant resulting from startup which is in excess of 30% opacity for a period or periods aggregating more than six (6) minutes in any sixty (60) consecutive minutes (Colorado Regulation No. 1, Section II.A.4).

Compliance with these limitations shall be monitored by conducting visual emission observations in accordance with EPA Reference Method 9 as follows:

- 3.5.3 Engine startup shall not exceed 30 minutes. An engine startup period of less than 30 minutes shall not require an opacity observation to monitor compliance with the opacity limit in Condition 3.5.2. A record shall be kept of the date and time the engine started and when it was shutdown.
- 3.5.4 An opacity observation shall be conducted annually (calendar year period) to monitor compliance with the opacity limit in Condition 3.5.1. If the engine is operated more than 250 hours in any calendar year period, a second opacity observation shall be conducted.

Operating Permit Number: 04OPJE272 Issued: 4/1/10

If two opacity readings are conducted in the annual (calendar year) period, such readings shall be conducted at least thirty days apart.

- 3.5.5 If the engine is not operated during the annual (calendar year) period, then no opacity observations are required.
- 3.5.6 Subject to the provisions of C.R.S. 25-7-123.1 and in the absence of credible evidence to the contrary, exceedance of the opacity limit shall be considered to exist from the time a Method 9 reading is taken that shows an exceedance of the opacity limit until a Method 9 reading is taken that shows the opacity is less than the opacity limit.
- 3.5.7 All Method 9 opacity observations shall be performed by an observer with current and valid Method 9 certification. Results of Method 9 readings and a copy of the certified Method 9 reader's certificate shall be kept on site and made available to the Division upon request.
- 3.6 This engine is subject to the requirements in 40 CF Part 60 Subpart IIII, "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines", as adopted by reference in Colorado Regulation No. 6, Part A. The specific applicable requirements are included in Section II, Condition 5 of this permit.
- 3.7 This engine is subject to the requirements in 40 CFR Part 63 Subpart ZZZZ, "National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines", as follows:

Note that as of the date of revised permit issuance [February 14, 2012], the requirements in 40 CFR Part 63 Subpart ZZZZ (those provisions published in the January 18, 2008 Federal Register) have not been adopted into Colorado Regulation No. 8, Part E by the Division and are therefore not state-enforceable. In the event that the Division adopts these requirements, these requirements will become both state and federally enforceable.

An affected source that is a new or reconstructed stationary RICE located at an area source must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII. No further requirements apply for such engines under this part. (§ 63.6590(c)(1))

Operating Permit Number: 04OPJE272 Issued: 4/1/10

4. E036 – Emergency Fire-Pump, 149 hp

Parameter	Permit			Compliance	Monitoring	
	Condition Number	Short Term	Long Term	Emission Factor	Method	Interval
NSPS Subpart	4.1	NO _X + NMHC – 7.8 g/hp-hr		N/A	See Condition 4.1.	
IIII		CO – 3.7	g/hp-hr			
Requirements		PM - 0.6	g/hp-hr			
Annual Emissions	4.2	N/A	N/A	PM/PM ₁₀ 0.19 g/hp-hr SO ₂	Recordkeeping and Calculation	Annually, if hours of operation exceed
				$2.12 \times 10^{-4} \text{ lb/gal}$		100
				NO _X		
				4.99 g/hp-hr		
				VOC		
				0.21 g/hp-hr		
				CO		
				0.33 g/hp-hr		
Hours of operation	4.3	N/A	N/A	N/A	Recordkeeping	Annually
SO_2	4.4	0.8 lbs/MMBtu		N/A	Fuel Restriction	See Condition 4.4.
Opacity	4.5	Not to Exceed 2 Provided f		N/A	EPA Method 9	Annually
		For Startup – Not for a Period Aggregating Mo Minutes in any 6 Minutes Minutes	or Periods ore than Six (6) 60 Consecutive	N/A		
MACT Subpart ZZZZ Requirements*	4.6	Compliance with MACT met by complying with NSPS Subpart IIII		N/A	See Condition 4.6	

^{*}Note that as of the issuance date of this revised permit [February 14, 2012], the provisions in 40 CFR Part 63 Subpart ZZZZ (those provisions published in the January 18, 2008 Federal Register) have not been adopted in Colorado Regulation No. 8, Part E.

- 4.1 This engine is subject to the requirements in 40 CFR Part 60 Subpart IIII, "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines", as adopted by reference in Colorado Regulation No. 6, Part A. The specific applicable requirements are included in Section II, Condition 5 of this permit.
- 4.2 The emission factors listed above have been approved by the Division and shall be used to calculate emissions from the fire pump engine (PM, PM₁₀, NO_X and CO NSPS emission limitations, VOC from manufacturer and SO₂ NSPS fuel limit (15 ppm sulfur), assuming diesel density of 7.05 lb/gal). If hours of operation for this engine exceed 100 hours in any calendar year, annual emissions for purposes of APEN reporting and payment of annual fees shall be

Operating Permit Number: 04OPJE272 Issued: 4/1/10

determined using the above emission factors, the maximum horsepower (149 hp) or fuel consumption (9.5 gal/hr) and the hours of operation (as required by Condition 4.3) the following equations:

All but SO_2 : Tons/yr = [EF (g/hp-hr) x hours of operation (hrs/yr) x maximum hp]

[(453.6 g/lb) x (2000 lbs/ton)]

SO₂: Tons/yr = [EF (lb/gal) x hours of operation (hrs/yr) x maximum fuel (gal/hr)]

2000 lbs/ton

4.3 Hours of operation shall be monitored annually and recorded in a log to be made available to the Division upon request. Recorded data shall be used to calculate emissions as required by Condition 4.2.

Note that if annual hours of operation equal or exceed 1,450 hours in any calendar year, the permittee shall submit an application to revise this permit within 30 days in order to include annual fuel consumption and emission limitations in this permit.

- 4.4 Sulfur Dioxide (SO₂) emissions shall not exceed 0.8 lbs/MMBtu (Colorado Regulation No. 1 Section VI.B.4.b.(i)). In the absence of credible evidence to the contrary, compliance with the SO₂ limitation shall be presumed since only diesel fuel that meets the sulfur limitations in Conditions 5.14 and 5.1.5 is permitted to be used as fuel in this engine.
- 4.5 Opacity of emissions shall not exceed the following:
 - 4.5.1 Except as provided for in Condition 4.5.2 below, no owner or operator of a source shall allow or cause the emission into the atmosphere of any air pollutant which is in excess of 20% opacity (Colorado Regulation No. 1, Section II.A.1).
 - 4.5.2 No owner or operator of a source shall allow or cause to be emitted into the atmosphere any air pollutant resulting from startup which is in excess of 30% opacity for a period or periods aggregating more than six (6) minutes in any sixty (60) consecutive minutes (Colorado Regulation No. 1, Section II.A.4).

Compliance with these limitations shall be monitored by conducting visual emission observations in accordance with EPA Reference Method 9 as follows:

- 4.5.3 Engine startup shall not exceed 30 minutes. An engine startup period of less than 30 minutes shall not require an opacity observation to monitor compliance with the opacity limit in Condition 4.5.2. A record shall be kept of the date and time the engine started and when it was shutdown.
- 4.5.4 An opacity observation shall be conducted annually (calendar year period) to monitor compliance with the opacity limit in Condition 4.5.1. If the engine is operated more than 250 hours in any calendar year period, a second opacity observation shall be conducted. If two opacity readings are conducted in the annual (calendar year) period, such readings shall be conducted at least thirty days apart.

Operating Permit Number: 04OPJE272 Issued: 4/1/10

- 4.5.5 If the engine is not operated during the annual (calendar year) period, then no opacity observations are required.
- 4.5.6 Subject to the provisions of C.R.S. 25-7-123.1 and in the absence of credible evidence to the contrary, exceedance of the opacity limit shall be considered to exist from the time a Method 9 reading is taken that shows an exceedance of the opacity limit until a Method 9 reading is taken that shows the opacity is less than the opacity limit.
- 4.5.7 All Method 9 opacity observations shall be performed by an observer with current and valid Method 9 certification. Results of Method 9 readings and a copy of the certified Method 9 reader's certificate shall be kept on site and made available to the Division upon request.
- 4.6 This engine is subject to the requirements in 40 CFR Part 63 Subpart ZZZZ, "National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines", as follows:

Note that as of the date of revised permit issuance [February 14, 2012], the requirements in 40 CFR Part 63 Subpart ZZZZ (those provisions published in the January 18, 2008 Federal Register) have not been adopted into Colorado Regulation No. 8, Part E by the Division and are therefore not state-enforceable. In the event that the Division adopts these requirements, these requirements will become both state and federally enforceable.

An affected source that is a new or reconstructed stationary RICE located at an area source must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII. No further requirements apply for such engines under this part. (§ 63.6590(c)(1))

Operating Permit Number: 04OPJE272 Issued: 4/1/10

5. Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60 Subpart IIII)

5.1 Engines E35 (generator) and E36 (emergency fire pump) are subject to the requirements in 40 CFR Part 60 Subpart IIII, "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines", as adopted by reference in Colorado Regulation No. 6, Part A, including but not limited to the following requirements:

What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine? (\S 60.4205)

5.1.1 **Generator:** Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in §60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE. (§ 60.4205(b))

Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (a)(1) through (2) of this section. (§ 60.4202(a))

For engines with a maximum engine power greater than or equal to 37 KW (50 HP), the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants beginning in model year 2007. (§ 60.4202(a)(2))

The specific emission limitations in 40 CFR 89.112 that apply to this unit are as follows:

	Tier II requirements for Model Engines Greater than 560 kW					
Emission Standards (g/kW-hr)			Emission Standards (g/hp-hr)			
NMHC +	CO	PM NMHC + CO P				
NOX			NOX			
6.4	3.5	0.2	4.77	2.61	0.15	

Note that the smoke standards in 40 CFR 89.113 do not apply because the engine is a constant speed engine (89.113(c)(3))

5.1.2 **Fire Pump:** Owners and operators of fire pump engines with a displacement of less than 30 liters per cylinder must comply with the emission standards in table 4 to this subpart, for all pollutants. (§ 60.4205(c))

Operating Permit Number: 04OPJE272 Issued: 4/1/10

The specific emission limitations in table 4 that apply to this engine are as follows:

Maximum Engine Power 100 ≤ hp < 175				
Model Year	Model Year 2009 and earlier			
Emission Standards (g/hp-hr)				
NMHC + NOX CO P				
7.8	3.7	0.6		

How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine? (§ 60.4206)

Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §§60.4204 and 60.4205 according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine

What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart? (§ 60.4207)

Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel. ((§ 60.4207(a))

The fuel limitations in 80.510(b) are: sulfur content of 15 ppm maximum for NR diesel fuel and 500 ppm maximum for LM diesel fuel and a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.

The diesel fuel in the engine's day tank shall be sampled and analyzed within 60 days of permit issuance to determine the sulfur and cetane and/or aromatic content using appropriate ASTM methods, or equivalent if approved in advance by the Division. In lieu of sampling, vendor data may be used to determine the sulfur and cetane and/or aromatic content, provided that sampling and analysis was performed using the appropriate ASTM methods. If the tank is empty prior to permit issuance, sampling of the day tank is not required, compliance shall be monitored by sampling each shipment of diesel fuel as specified below.

Thereafter compliance with the fuel limitations shall be monitored by sampling and analyzing each shipment of diesel fuel to determine the sulfur and cetane and/or aromatic content using appropriate ASTM methods, or equivalent if approved in advance by the Division. In lieu of sampling, vendor data may be used to determine the sulfur and cetane and/or aromatic content, provided that the sampling and analysis was performed using the appropriate ASTM methods.

What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine? (§ 60.4209)

If you are an owner or operator, you must meet the monitoring requirements of this section. In addition, you must also meet the monitoring requirements specified in §60.4211.

- 5.1.5 If you are an owner or operator of an emergency stationary CI internal combustion engine, you must install a non-resettable hour meter prior to startup of the engine. (§ 60.4209(a)).
- 5.1.6 If you are an owner or operator of a stationary CI internal combustion engine equipped with a diesel particulate filter to comply with the emission standards in §60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached. (§ 60.4209(b))

What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine? (§ 60.4211)

- 5.1.7 If you are an owner or operator and must comply with the emission standards specified in this subpart, you must operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. In addition, owners and operators may only change those settings that are permitted by the manufacturer. You must also meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you. (§ 60.4211(a))
- 5.1.8 **Fire Pump only:** If you are an owner or operator of a pre-2007 model year stationary CI internal combustion engine and must comply with the emission standards specified in §§60.4204(a) or 60.4205(a), or if you are an owner or operator of a CI fire pump engine that is manufactured prior to the model years in table 3 to this subpart and must comply with the emission standards specified in §60.4205(c), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) through (5) of this section. (§ 60.4211(b))
 - Purchasing an engine certified according to 40 CFR part 89 or 40 CFR part 94, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications. (§ 60.4211(b)(1))
 - 5.1.8.2 Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly. (§ 60.4211(b)(2))
 - 5.1.8.3 Keeping records of engine manufacturer data indicating compliance with the standards. (§ 60.4211(b)(3))
 - 5.1.8.4 Keeping records of control device vendor data indicating compliance with the standards. (§ 60.4211(b)(4))

Operating Permit Number: 04OPJE272 Issued: 4/1/10

- 5.1.8.5 Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in §60.4212, as applicable. (§ 60.4211(b)(5))
- Generator only: If you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(b) or §60.4205(b), or if you are an owner or operator of a CI fire pump engine that is manufactured during or after the model year that applies to your fire pump engine power rating in table 3 to this subpart and must comply with the emission standards specified in §60.4205(c), you must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's specifications. (§ 60.4211(c))
- 5.1.10 Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. Anyone may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year. For owners and operators of emergency engines meeting standards under §60.4205 but not §60.4204, any operation other than emergency operation, and maintenance and testing as permitted in this section, is prohibited. (§ 60.4211(e))

What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine? (§ 60.4214)

- 5.1.11 If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time. (§ 60.4214(b))
- 5.1.12 If the stationary CI internal combustion engine is equipped with a diesel particulate filter, the owner or operator must keep records of any corrective action taken after the backpressure monitor has notified the owner or operator that the high backpressure limit of the engine is approached. (§ 60.4214(c))

What parts of the general provisions apply to me? (§ 60.4218)

5.1.13 Table 8 of this subpart shows which parts of the General Provisions in §§ 60.1 through 60.19 apply to you. (§ 60.4218)

Note that the relevant general provisions are included in Condition 6.1 of this permit.

6. NSPS General Provisions

- 6.1 No article, machine, equipment or process shall be used to conceal an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gasses discharged to the atmosphere. (40 CFR 60 Subpart A § 60.12, as adopted by reference in Colorado Regulation No. 6, Part A).
- 6.2 Performance tests shall be conducted in accordance with the requirements in 40 CFR Part 60 Subpart A § 60.8.

Operating Permit Number: 04OPJE272 Issued: 4/1/10

7. Facility Wide Requirements

Parameter	Permit	Limitations		Compliance	Monitoring	
	Condition Number	Short Term	Long Term	Emission Factor	Method	Interval
Each Individual HAP	7.1	N/A	9 tons/year	See below	Recordkeeping and Calculation	Monthly
Total Facility Wide HAPs		N/A	20 tons/year	See below		
Insignificant Activities	7.2.	Tracking of PM, PM ₁₀ and CO Emissions (See Condition 7.2) Single HAP (formaldehyde) Emissions Not to Exceed 1 ton/yr		See Condition 7.2.	Recordkeeping and Calculation	One-Time

7.1 Emissions of HAPs shall not exceed the limitations stated above (as provided for in Section I, Condition 1.3 and Colorado Regulation No. 3, Part C, Sections I.A.7 and III.B.7, to include facility wide HAP limits). Monthly individual HAP emissions from the Plains End I and Plains End II engines shall be calculated as specified in Conditions 1.5 and 2.5 of this permit. Monthly emissions of individual HAPs from the Plains End I and Plains End II engines

Monthly emissions of individual HAPS from the Plains End I engines shall be summed to determine monthly emissions of combined HAPS from the Plains End I engines.

Monthly emissions of individual HAPS from the Plains End II engines shall be summed to determine monthly emissions of combined HAPS from the Plains End II engines.

Monthly emissions of each individual HAP from the Plains End I engines shall be summed with the monthly individual HAP emissions from the Plains End II engines and a twelve-month rolling total of facility wide individual HAP emissions will be maintained to monitor compliance with the annual individual HAP emission limit. Each month, a new twelve month total shall be calculated using the previous twelve months data.

Monthly emissions of combined HAPs from the Plains End I engines shall be summed with the monthly combined HAPS emissions from the Plains End II engines and a twelve-month rolling total of facility wide combined HAPS emissions will be maintained to monitor compliance with the annual individual HAP emission limit. Each month, a new twelve month total shall be calculated using the previous twelve months data.

- 7.2 Emissions from insignificant activities are subject to the following requirements:
 - 7.2.1 A potential to emit (PTE) analysis of PM, PM₁₀ and CO emissions from insignificant activities shall be conducted and retained on site. The PM, PM₁₀ and CO PTE from insignificant activities shall be summed together with the PM, PM₁₀ and CO PTE from the significant emission units (included in section II of this permit) to determine

the facility wide PTE and retained on site to be made available to the Division upon request.

Based on the information available as of revised permit issuance [February 14, 2012], the insignificant activities to be included in the above analysis are as follows: two fuel gas heaters (each at 1.9 MMBtu/hr) and twenty-one space heaters (each at 0.252 MMBtu/hr).

The above analysis shall updated if any new insignificant activities that can potentially emit PM, PM_{10} and CO emissions are added to the facility. In the event that the revised analysis indicates that the facility wide PTE of PM, PM_{10} or CO equals or exceeds 250 tons per year, the permittee shall submit, within thirty (30) days, an application to modify this permit to revise Section I, Condition 3.1 to appropriately categorize this source as a major stationary source for purposes of PSD review requirements.

7.2.2 Emissions of any single HAP (formaldehyde) from insignificant activities shall not exceed 1 ton/yr (as provided for in Section I, Condition 1.3 and Colorado Regulation No. 3, Part C, Sections I.A.7 and III.B.7, to include facility wide HAP limits). A PTE analysis of formaldehyde emissions from insignificant activities shall be conducted and retained on site to demonstrate emissions of any single HAP from insignificant activities do not exceed 1 ton/yr. The calculations and any supporting documentation shall be made available to the Division upon request.

Based on the information available as of revised permit issuance [February 14, 2012], the insignificant activities to be included in the above analysis are as follows: two fuel gas heaters (each at 1.9 MMBtu/hr) and twenty-one space heaters (each at 0.252 MMBtu/hr).

The above analysis shall updated if any new insignificant activities that can potentially emit formaldehyde emissions are added to the facility.

8. Acid Rain Program New Unit Exemption Requirements

- 8.1 The engines at this facility qualify for **new unit exemptions** under the Acid Rain Program pursuant to 40 CFR Part 72 § 72.7 as follows:
 - 8.1.1 This new unit exemption applies to any new utility unit that has not previously lost an exemption under the provisions of Condition 8.1.4.4 and that, in each year starting with the first year for which the unit is to be exempt under this Condition (40 CFR Part 72 § 72.7(a), as adopted by reference in Colorado Regulation No. 18):
 - 8.1.1.1 Serves during the entire year (except for any period before the unit commenced commercial operation) one or more generators with total name-plate capacity of 25MWe or less;

- 8.1.1.2 Burns fuel that does not include any coal or coal-derived fuel (except coal-derived gaseous fuel with a total sulfur content no greater than natural gas); and
- 8.1.1.3 Burns gaseous fuel with an annual average sulfur content of 0.05 percent or less by weight (as determined under Condition 8.1.3), and non-gaseous fuel with an annual average sulfur content of 0.05 percent or less by weight (as determined under Condition 8.1.3).
- Any new utility that meets the requirements of Condition 8.1.1 and that is not allocated any allowances under Subpart B of 40 CFR Part 73 shall be exempt from the Acid Rain Program except for the provisions of 40 CFR Part 72 §§ 72.2 through 72.6 and 72.10 through 72.13 (40 CFR Part 72 § 72.7(b)(1), as adopted by reference in Colorado Regulation No. 18).
- 8.1.3 Compliance with the requirement that fuel burned during the year have an annual average sulfur content of 0.05 percent by weight or less shall be determined using a method of determining sulfur content that provides information with reasonable precision, reliability, accessibility, and timeliness (40 CFR Part 72 § 72.7(d), as adopted by reference in Colorado Regulation No. 18).

For gaseous fuel burned during the year, if natural gas is the only gaseous fuel burned, the requirement is assumed to be met (40 CFR Part 72 § 72.7(d)(1), as adopted by reference in Colorado Regulation No. 18).

8.1.4 Special Provisions for New Unit Exemptions

- 8.1.4.1 The owners or operators of a unit exempt under the provisions of Condition 8.1 shall (40 CFR Part 72 § 72.7(f)(1), as adopted by reference in Colorado Regulation No. 18):
 - a. Comply with the requirements of Condition 8.1.1 for all periods for which the unit is exempt under this section; and
 - b. Comply with the requirements of the Acid Rain Program concerning all periods for which the exemption is not in effect, even if such requirements arise, or must be complied with, after the exemption takes effect.
- 8.1.4.2 For any period for which a unit is exempt under Condition 8.1, the unit is not an affected unit under the Acid Rain Program and 40 CFR Parts 70 and 71 and is not eligible to be an opt-in source under 40 CFR Part 74. As an unaffected unit, the unit shall continue to be subject to any other applicable requirements under 40 CFR Parts 70 and 71 (40 CFR Part 72 § 72.7(f)(2), as adopted by reference in Colorado Regulation No. 18).
- 8.1.4.3 For a period of 5 years from the date the records are created, the owners and operators of a unit exempt under this section shall retain at the source

that includes the unit records demonstrating that the requirements of Condition 8.1.1 are met. The 5-year period for keeping records may be extended for cause, at any time prior to the end of the period, in writing by the Administrator or the permitting authority

Such records shall include, for each delivery of fuel to the unit or for fuel delivered to the unit continuously by pipeline, the type of fuel, the sulfur content, and the sulfur content of each sample taken.

The owners and operators bear the burden of proof that the requirements of Condition 8.1.1 are met (40 CFR Part 72 § 72.7(f)(3), as adopted by reference in Colorado Regulation No. 18).

- 8.1.4.4 **Loss of Exemption.** On the earliest of the following dates, a unit exempt under 40 CFR Part 72 §§ 72.7 (b), (c), or (e) shall lose its exemption and for purposes of applying 40 CFR Parts 70 and 71, shall be treated as an affected unit under the Acid Rain Program:
 - a. The date on which the unit first serves one or more generators with total nameplate capacity in excess of 25 MWe;
 - b. The date on which the unit burns any coal or coal-derived fuel except for coal-derived gaseous fuel with a total sulfur content no greater than natural gas; or
 - c. January 1 of the year following the year in which the annual average sulfur content for gaseous fuel burned at the unit exceeds 0.05 percent by weight (as determined under 40 CFR Part 72 § 72.7(d)) or for nongaseous fuel burned at the unit exceeds 0.05 percent by weight (as determined under 40 CFR Part 72 § 72.7(d)).

Notwithstanding 40 CFR Part 72 §§ 72.30(b) and (c), the designated representative for a unit that loses its exemption under this section shall submit a complete Acid Rain permit application on the later of January 1, 1998 or 60 days after the first date on which the unit is no longer exempt.

For the purpose of applying monitoring requirements under 40 CFR Part 75, a unit that loses its exemption under Condition 8.1 shall be treated as a new unit that commenced commercial operation on the first date on which the unit is no longer exempt (40 CFR Part 72 § 72.7(f)(4), as adopted by reference in Colorado Regulation No. 18).

Operating Permit Number: 04OPJE272 Issued: 4/1/10

SECTION III - Permit Shield

Regulation No. 3, 5 CCR 1001-5, Part C, §§ I.A.4, V.D., & XIII.B and § 25-7-114.4(3)(a), C.R.S.

1. Specific Non-Applicable Requirements

Based on the information available to the Division and supplied by the applicant, the following parameters and requirements have been specifically identified as non-applicable to the facility to which this permit has been issued. This shield does not protect the source from any violations that occurred prior to or at the time of permit issuance. In addition, this shield does not protect the source from any violations that occur as a result of any modifications or reconstruction on which construction commenced prior to permit issuance.

The source did not specifically identify and justify any non-applicable requirements to be included in the permit shield.

2. General Conditions

Compliance with this Operating Permit shall be deemed compliance with all applicable requirements specifically identified in the permit and other requirements specifically identified in the permit as not applicable to the source. This permit shield shall not alter or affect the following:

- 2.1 The provisions of §§ 25-7-112 and 25-7-113, C.R.S., or § 303 of the federal act, concerning enforcement in cases of emergency;
- 2.2 The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;
- 2.3 The applicable requirements of the federal Acid Rain Program, consistent with § 408(a) of the federal act;
- 2.4 The ability of the Air Pollution Control Division to obtain information from a source pursuant to § 25-7-111(2)(I), C.R.S., or the ability of the Administrator to obtain information pursuant to § 114 of the federal act;
- 2.5 The ability of the Air Pollution Control Division to reopen the Operating Permit for cause pursuant to Regulation No. 3, Part C, § XIII.
- 2.6 Sources are not shielded from terms and conditions that become applicable to the source subsequent to permit issuance.

3. Streamlined Conditions

The following applicable requirements have been subsumed within this operating permit using the pertinent streamlining procedures approved by the U.S. EPA. For purposes of the permit shield, compliance with the

Operating Permit Number: 04OPJE272 Issued: 4/1/10

listed permit conditions will also serve as a compliance demonstration for purposes of the associated subsumed requirements.

Permit Condition	Streamlined (Subsumed) Requirements				
	Plains End I				
Section II, Conditions 1.1.3 and 1.8	Colorado Regulation No. 7, Section XVI [lean burn engines > 500 hp shall be equipped with oxidation catalysts]				
Section II, Conditions 1.1.3 and 1.8	Colorado Regulation No. 7, Section XVII.E.3.b.(i) [lean burn engines > 500 hp shall be equipped with oxidation catalysts] – State-only Requirement				
Plains End II					
Section II, Conditions 2.1.3 and 2.8	Colorado Regulation No. 7, Section XVI [lean burn engines > 500 hp shall be equipped with oxidation catalysts]				

Operating Permit Number: 04OPJE272 Issued: 4/1/10

SECTION IV - General Permit Conditions

11/16/10 version

1. Administrative Changes

Regulation No. 3, 5 CCR 1001-5, Part A, § III.

The permittee shall submit an application for an administrative permit amendment to the Division for those permit changes that are described in Regulation No. 3, Part A, § I.B.1. The permittee may immediately make the change upon submission of the application to the Division.

2. Certification Requirements

Regulation No. 3, 5 CCR 1001-5, Part C, §§ III.B.9., V.C.16.a.& e. and V.C.17.

- a. Any application, report, document and compliance certification submitted to the Air Pollution Control Division pursuant to Regulation No. 3 or the Operating Permit shall contain a certification by a responsible official of the truth, accuracy and completeness of such form, report or certification stating that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.
- b. All compliance certifications for terms and conditions in the Operating Permit shall be submitted to the Air Pollution Control Division at least annually unless a more frequent period is specified in the applicable requirement or by the Division in the Operating Permit.
- c. Compliance certifications shall contain:
 - (i) the identification of each permit term and condition that is the basis of the certification;
 - (ii) the compliance status of the source;
 - (iii) whether compliance was continuous or intermittent;
 - (iv) method(s) used for determining the compliance status of the source, currently and over the reporting period; and
 - such other facts as the Air Pollution Control Division may require to determine the compliance status of the source.
- d. All compliance certifications shall be submitted to the Air Pollution Control Division and to the Environmental Protection Agency at the addresses listed in Appendix D of this Permit.
- e. If the permittee is required to develop and register a risk management plan pursuant to § 112(r) of the federal act, the permittee shall certify its compliance with that requirement; the Operating Permit shall not incorporate the contents of the risk management plan as a permit term or condition.

3. Common Provisions

Common Provisions Regulation, 5 CCR 1001-2 §§ II.A., II.B., II.C., II, E., II.F., II.I, and II.J

a. To Control Emissions Leaving Colorado

Operating Permit Number: 04OPJE272 Issued: 4/1/10

When emissions generated from sources in Colorado cross the State boundary line, such emissions shall not cause the air quality standards of the receiving State to be exceeded, provided reciprocal action is taken by the receiving State.

b. Emission Monitoring Requirements

The Division may require owners or operators of stationary air pollution sources to install, maintain, and use instrumentation to monitor and record emission data as a basis for periodic reports to the Division.

c. Performance Testing

The owner or operator of any air pollution source shall, upon request of the Division, conduct performance test(s) and furnish the Division a written report of the results of such test(s) in order to determine compliance with applicable emission control regulations.

Performance test(s) shall be conducted and the data reduced in accordance with the applicable reference test methods unless the Division:

- (i) specifies or approves, in specific cases, the use of a test method with minor changes in methodology;
- (ii) approves the use of an equivalent method;
- (iii) approves the use of an alternative method the results of which the Division has determined to be adequate for indicating where a specific source is in compliance; or
- (iv) waives the requirement for performance test(s) because the owner or operator of a source has demonstrated by other means to the Division's satisfaction that the affected facility is in compliance with the standard. Nothing in this paragraph shall be construed to abrogate the Commission's or Division's authority to require testing under the Colorado Revised Statutes, Title 25, Article 7, and pursuant to regulations promulgated by the Commission.

Compliance test(s) shall be conducted under such conditions as the Division shall specify to the plant operator based on representative performance of the affected facility. The owner or operator shall make available to the Division such records as may be necessary to determine the conditions of the performance test(s). Operations during period of startup, shutdown, and malfunction shall not constitute representative conditions of performance test(s) unless otherwise specified in the applicable standard.

The owner or operator of an affected facility shall provide the Division thirty days prior notice of the performance test to afford the Division the opportunity to have an observer present. The Division may waive the thirty day notice requirement provided that arrangements satisfactory to the Division are made for earlier testing.

The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:

- (i) Sampling ports adequate for test methods applicable to such facility;
- (ii) Safe sampling platform(s);
- (iii) Safe access to sampling platform(s); and
- (iv) Utilities for sampling and testing equipment.

Each performance test shall consist of at least three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic mean of results of at least three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the runs must be discontinued because of

forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the owner or operator's control, compliance may, upon the Division's approval, be determined using the arithmetic mean of the results of the two other runs.

Nothing in this section shall abrogate the Division's authority to conduct its own performance test(s) if so warranted.

d. Affirmative Defense Provision for Excess Emissions during Malfunctions

Note that until such time as the U.S. EPA approves this provision into the Colorado State Implementation Plan (SIP), it shall be enforceable only by the State.

An affirmative defense to a claim of violation under these regulations is provided to owners and operators for civil penalty actions for excess emissions during periods of malfunction. To establish the affirmative defense and to be relieved of a civil penalty in any action to enforce an applicable requirement, the owner or operator of the facility must meet the notification requirements below in a timely manner and prove by a preponderance of evidence that:

- (i) The excess emissions were caused by a sudden, unavoidable breakdown of equipment, or a sudden, unavoidable failure of a process to operate in the normal or usual manner, beyond the reasonable control of the owner or operator;
- (ii) The excess emissions did not stem from any activity or event that could have reasonably been foreseen and avoided, or planned for, and could not have been avoided by better operation and maintenance practices;
- (iii) Repairs were made as expeditiously as possible when the applicable emission limitations were being exceeded;
- (iv) The amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions;
- (v) All reasonably possible steps were taken to minimize the impact of the excess emissions on ambient air quality;
- (vi) All emissions monitoring systems were kept in operation (if at all possible);
- (vii) The owner or operator's actions during the period of excess emissions were documented by properly signed, contemporaneous operating logs or other relevant evidence;
- (viii) The excess emissions were not part of a recurring pattern indicative of inadequate design, operation, or maintenance;
- (ix) At all times, the facility was operated in a manner consistent with good practices for minimizing emissions. This section is intended solely to be a factor in determining whether an affirmative defense is available to an owner or operator, and shall not constitute an additional applicable requirement; and
- (x) During the period of excess emissions, there were no exceedances of the relevant ambient air quality standards established in the Commissions' Regulations that could be attributed to the emitting source.

The owner or operator of the facility experiencing excess emissions during a malfunction shall notify the division verbally as soon as possible, but no later than noon of the Division's next working day, and shall submit written notification following the initial occurrence of the excess emissions by the end of the source's next reporting period. The notification shall address the criteria set forth above.

The Affirmative Defense Provision contained in this section shall not be available to claims for injunctive relief.

The Affirmative Defense Provision does not apply to failures to meet federally promulgated performance standards or emission limits, including, but not limited to, new source performance standards and national emission standards

for hazardous air pollutants. The affirmative defense provision does not apply to state implementation plan (sip) limits or permit limits that have been set taking into account potential emissions during malfunctions, including, but not necessarily limited to, certain limits with 30-day or longer averaging times, limits that indicate they apply during malfunctions, and limits that indicate they apply at all times or without exception.

e. Circumvention Clause

A person shall not build, erect, install, or use any article, machine, equipment, condition, or any contrivance, the use of which, without resulting in a reduction in the total release of air pollutants to the atmosphere, reduces or conceals an emission which would otherwise constitute a violation of this regulation. No person shall circumvent this regulation by using more openings than is considered normal practice by the industry or activity in question.

f. Compliance Certifications

For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in the Colorado State Implementation Plan, nothing in the Colorado State Implementation Plan shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed. Evidence that has the effect of making any relevant standard or permit term more stringent shall not be credible for proving a violation of the standard or permit term.

When compliance or non-compliance is demonstrated by a test or procedure provided by permit or other applicable requirement, the owner or operator shall be presumed to be in compliance or non-compliance unless other relevant credible evidence overcomes that presumption.

g. Affirmative Defense Provision for Excess Emissions During Startup and Shutdown

An affirmative defense is provided to owners and operators for civil penalty actions for excess emissions during periods of startup and shutdown. To establish the affirmative defense and to be relieved of a civil penalty in any action to enforce an applicable requirement, the owner or operator of the facility must meet the notification requirements below in a timely manner and prove by a preponderance of the evidence that:

- (i) The periods of excess emissions that occurred during startup and shutdown were short and infrequent and could not have been prevented through careful planning and design;
- (ii) The excess emissions were not part of a recurring pattern indicative of inadequate design, operation or maintenance:
- (iii) If the excess emissions were caused by a bypass (an intentional diversion of control equipment), then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- (iv) The frequency and duration of operation in startup and shutdown periods were minimized to the maximum extent practicable;
- (v) All possible steps were taken to minimize the impact of excess emissions on ambient air quality;
- (vi) All emissions monitoring systems were kept in operation (if at all possible);
- (vii) The owner or operator's actions during the period of excess emissions were documented by properly signed, contemporaneous operating logs or other relevant evidence; and,
- (viii) At all times, the facility was operated in a manner consistent with good practices for minimizing emissions. This subparagraph is intended solely to be a factor in determining whether an affirmative defense is available to an owner or operator, and shall not constitute an additional applicable requirement.

The owner or operator of the facility experiencing excess emissions during startup and shutdown shall notify the Division verbally as soon as possible, but no later than two (2) hours after the start of the next working day, and shall submit written quarterly notification following the initial occurrence of the excess emissions. The notification shall address the criteria set forth above.

The Affirmative Defense Provision contained in this section shall not be available to claims for injunctive relief.

The Affirmative Defense Provision does not apply to State Implementation Plan provisions or other requirements that derive from new source performance standards or national emissions standards for hazardous air pollutants, or any other federally enforceable performance standard or emission limit with an averaging time greater than twenty-four hours. In addition, an affirmative defense cannot be used by a single source or small group of sources where the excess emissions have the potential to cause an exceedance of the ambient air quality standards or Prevention of Significant Deterioration (PSD) increments.

In making any determination whether a source established an affirmative defense, the Division shall consider the information within the notification required above and any other information the Division deems necessary, which may include, but is not limited to, physical inspection of the facility and review of documentation pertaining to the maintenance and operation of process and air pollution control equipment

4. Compliance Requirements

Regulation No. 3, 5 CCR 1001-5, Part C, §§ III.C.9., V.C.11. & 16.d., § 25-7-122.1(2), C.R.S.

- a. The permittee must comply with all conditions of the Operating Permit. Any permit noncompliance relating to federally-enforceable terms or conditions constitutes a violation of the federal act, as well as the state act and Regulation No. 3. Any permit noncompliance relating to state-only terms or conditions constitutes a violation of the state act and Regulation No. 3, shall be enforceable pursuant to state law, and shall not be enforceable by citizens under § 304 of the federal act. Any such violation of the federal act, the state act or regulations implementing either statute is grounds for enforcement action, for permit termination, revocation and reissuance or modification or for denial of a permit renewal application.
- b. It shall not be a defense for a permittee in an enforcement action or a consideration in favor of a permittee in a permit termination, revocation or modification action or action denying a permit renewal application that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.
- c. The permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of any request by the permittee for a permit modification, revocation and reissuance, or termination, or any notification of planned changes or anticipated noncompliance does not stay any permit condition, except as provided in §§ X. and XI. of Regulation No. 3, Part C.
- d. The permittee shall furnish to the Air Pollution Control Division, within a reasonable time as specified by the Division, any information that the Division may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Division copies of records required to be kept by the permittee, including information claimed to be confidential. Any information subject to a claim of confidentiality shall be specifically identified and submitted separately from information not subject to the claim.
- e. Any schedule for compliance for applicable requirements with which the source is not in compliance at the time of permit issuance shall be supplemental, and shall not sanction noncompliance with, the applicable requirements on which it is based.
- f. For any compliance schedule for applicable requirements with which the source is not in compliance at the time of permit issuance, the permittee shall submit, at least every 6 months unless a more frequent period is specified in the applicable requirement or by the Air Pollution Control Division, progress reports which contain the following:

- (i) dates for achieving the activities, milestones, or compliance required in the schedule for compliance, and dates when such activities, milestones, or compliance were achieved; and
- (ii) an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.
- g. The permittee shall not knowingly falsify, tamper with, or render inaccurate any monitoring device or method required to be maintained or followed under the terms and conditions of the Operating Permit.

5. Emergency Provisions

Regulation No. 3, 5 CCR 1001-5, Part C, § VII.

An emergency means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed the technology-based emission limitation under the permit due to unavoidable increases in emissions attributable to the emergency. "Emergency" does not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error. An emergency constitutes an affirmative defense to an enforcement action brought for noncompliance with a technology-based emission limitation if the permittee demonstrates, through properly signed, contemporaneous operating logs, or other relevant evidence that:

- a. an emergency occurred and that the permittee can identify the cause(s) of the emergency;
- b. the permitted facility was at the time being properly operated;
- c. during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and
- d. the permittee submitted oral notice of the emergency to the Air Pollution Control Division no later than noon of the next working day following the emergency, and followed by written notice within one month of the time when emissions limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

This emergency provision is in addition to any emergency or malfunction provision contained in any applicable requirement.

6. Emission Controls for Asbestos

Regulation No. 8, 5 CCR 1001-10, Part B

The permittee shall not conduct any asbestos abatement activities except in accordance with the provisions of Regulation No. 8, Part B, "asbestos control."

7. Emissions Trading, Marketable Permits, Economic Incentives

Regulation No. 3, 5 CCR 1001-5, Part C, § V.C.13.

No permit revision shall be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are specifically provided for in the permit.

Operating Permit Number: 04OPJE272 Issued: 4/1/10

8. Fee Payment

C.R.S. §§ 25-7-114.1(6) and 25-7-114.7

- a. The permittee shall pay an annual emissions fee in accordance with the provisions of § 25-7-114.7. A 1% per month late payment fee shall be assessed against any invoice amounts not paid in full on the 91st day after the date of invoice, unless a permittee has filed a timely protest to the invoice amount.
- b. The permittee shall pay a permit processing fee in accordance with the provisions of § 25-7-114.7. If the Division estimates that processing of the permit will take more than 30 hours, it will notify the permittee of its estimate of what the actual charges may be prior to commencing any work exceeding the 30 hour limit.
- c. The permittee shall pay an APEN fee in accordance with the provisions of § 25-7-114.1(6) for each APEN or revised APEN filed.

9. Fugitive Particulate Emissions

Regulation No. 1, 5 CCR 1001-3, § III.D.1.

The permittee shall employ such control measures and operating procedures as are necessary to minimize fugitive particulate emissions into the atmosphere, in accordance with the provisions of Regulation No. 1, § III.D.1.

10. Inspection and Entry

Regulation No. 3, 5 CCR 1001-5, Part C, § V.C.16.b.

Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Air Pollution Control Division, or any authorized representative, to perform the following:

- a. enter upon the permittee's premises where an Operating Permit source is located, or emissions-related activity is conducted, or where records must be kept under the terms of the permit;
- b. have access to, and copy, at reasonable times, any records that must be kept under the conditions of the permit;
- c. inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the Operating Permit;
- d. sample or monitor at reasonable times, for the purposes of assuring compliance with the Operating Permit or applicable requirements, any substances or parameters.

11. Minor Permit Modifications

Regulation No. 3, 5 CCR 1001-5, Part C, §§ X. & XI.

The permittee shall submit an application for a minor permit modification before making the change requested in the application. The permit shield shall not extend to minor permit modifications.

12. New Source Review

Regulation No. 3, 5 CCR 1001-5, Part B

The permittee shall not commence construction or modification of a source required to be reviewed under the New Source Review provisions of Regulation No. 3, Part B, without first receiving a construction permit.

Operating Permit Number: 04OPJE272

Issued: 4/1/10

Last Revised: 2/14/12

13. No Property Rights Conveyed

Regulation No. 3, 5 CCR 1001-5, Part C, § V.C.11.d.

This permit does not convey any property rights of any sort, or any exclusive privilege.

14. Odor

Regulation No. 2, 5 CCR 1001-4, Part A

As a matter of state law only, the permittee shall comply with the provisions of Regulation No. 2 concerning odorous emissions.

15. Off-Permit Changes to the Source

Regulation No. 3, 5 CCR 1001-5, Part C, § XII.B.

The permittee shall record any off-permit change to the source that causes the emissions of a regulated pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from the change, including any other data necessary to show compliance with applicable ambient air quality standards. The permittee shall provide contemporaneous notification to the Air Pollution Control Division and to the Environmental Protection Agency at the addresses listed in Appendix D of this Permit. The permit shield shall not apply to any off-permit change.

16. Opacity

Regulation No. 1, 5 CCR 1001-3, §§ I., II.

The permittee shall comply with the opacity emissions limitation set forth in Regulation No. 1, §§ I.-II.

17. Open Burning

Regulation No. 9, 5 CCR 1001-11

The permittee shall obtain a permit from the Division for any regulated open burning activities in accordance with provisions of Regulation No. 9.

18. Ozone Depleting Compounds

Regulation No. 15, 5 CCR 1001-17

The permittee shall comply with the provisions of Regulation No. 15 concerning emissions of ozone depleting compounds. Sections I., II.C., II.D., III. IV., and V. of Regulation No. 15 shall be enforced as a matter of state law only.

19. Permit Expiration and Renewal

Regulation No. 3, 5 CCR 1001-5, Part C, §§ III.B.6., IV.C., V.C.2.

- a. The permit term shall be five (5) years. The permit shall expire at the end of its term. Permit expiration terminates the permittee's right to operate unless a timely and complete renewal application is submitted.
- b. Applications for renewal shall be submitted at least twelve months, but not more than 18 months, prior to the expiration of the Operating Permit. An application for permit renewal may address only those portions of the permit that require revision, supplementing, or deletion, incorporating the remaining permit terms by reference from the previous permit. A copy of any materials incorporated by reference must be included with the application.

Operating Permit Number: 04OPJE272 Issued: 4/1/10

20. Portable Sources

Regulation No. 3, 5 CCR 1001-5, Part C, § II.D.

Portable Source permittees shall notify the Air Pollution Control Division at least 10 days in advance of each change in location.

21. Prompt Deviation Reporting

Regulation No. 3, 5 CCR 1001-5, Part C, § V.C.7.b.

The permittee shall promptly report any deviation from permit requirements, including those attributable to malfunction conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken.

"Prompt" is defined as follows:

- a. Any definition of "prompt" or a specific timeframe for reporting deviations provided in an underlying applicable requirement as identified in this permit; or
- b. Where the underlying applicable requirement fails to address the time frame for reporting deviations, reports of deviations will be submitted based on the following schedule:
 - (i) For emissions of a hazardous air pollutant or a toxic air pollutant (as identified in the applicable regulation) that continue for more than an hour in excess of permit requirements, the report shall be made within 24 hours of the occurrence;
 - (ii) For emissions of any regulated air pollutant, excluding a hazardous air pollutant or a toxic air pollutant that continue for more than two hours in excess of permit requirements, the report shall be made within 48 hours; and
 - (iii) For all other deviations from permit requirements, the report shall be submitted every six (6) months, except as otherwise specified by the Division in the permit in accordance with paragraph 22.d. below.
- c. If any of the conditions in paragraphs b.i or b.ii above are met, the source shall notify the Division by telephone (303-692-3155) or facsimile (303-782-0278) based on the timetables listed above. [Explanatory note: Notification by telephone or facsimile must specify that this notification is a deviation report for an Operating Permit.] A written notice, certified consistent with General Condition 2.a. above (Certification Requirements), shall be submitted within 10 working days of the occurrence. All deviations reported under this section shall also be identified in the 6-month report required above.

"Prompt reporting" does not constitute an exception to the requirements of "Emergency Provisions" for the purpose of avoiding enforcement actions.

22. Record Keeping and Reporting Requirements

Regulation No. 3, 5 CCR 1001-5, Part A, § II.; Part C, §§ V.C.6., V.C.7.

- a. Unless otherwise provided in the source specific conditions of this Operating Permit, the permittee shall maintain compliance monitoring records that include the following information:
 - (i) date, place as defined in the Operating Permit, and time of sampling or measurements;
 - (ii) date(s) on which analyses were performed;

- (iii) the company or entity that performed the analysis;
- (iv) the analytical techniques or methods used;
- (v) the results of such analysis; and
- (vi) the operating conditions at the time of sampling or measurement.
- b. The permittee shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of the monitoring sample, measurement, report or application. Support information, for this purpose, includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the Operating Permit. With prior approval of the Air Pollution Control Division, the permittee may maintain any of the above records in a computerized form.
- c. Permittees must retain records of all required monitoring data and support information for the most recent twelve (12) month period, as well as compliance certifications for the past five (5) years on-site at all times. A permittee shall make available for the Air Pollution Control Division's review all other records of required monitoring data and support information required to be retained by the permittee upon 48 hours advance notice by the Division.
- d. The permittee shall submit to the Air Pollution Control Division all reports of any required monitoring at least every six (6) months, unless an applicable requirement, the compliance assurance monitoring rule, or the Division requires submission on a more frequent basis. All instances of deviations from any permit requirements must be clearly identified in such reports.
- e. The permittee shall file an Air Pollutant Emissions Notice ("APEN") prior to constructing, modifying, or altering any facility, process, activity which constitutes a stationary source from which air pollutants are or are to be emitted, unless such source is exempt from the APEN filing requirements of Regulation No. 3, Part A, § II.D. A revised APEN shall be filed annually whenever a significant change in emissions, as defined in Regulation No. 3, Part A, § II.C.2., occurs; whenever there is a change in owner or operator of any facility, process, or activity; whenever new control equipment is installed; whenever a different type of control equipment replaces an existing type of control equipment; whenever a permit limitation must be modified; or before the APEN expires. An APEN is valid for a period of five years. The five-year period recommences when a revised APEN is received by the Air Pollution Control Division. Revised APENs shall be submitted no later than 30 days before the five-year term expires. Permittees submitting revised APENs to inform the Division of a change in actual emission rates must do so by April 30 of the following year. Where a permit revision is required, the revised APEN must be filed along with a request for permit revision. APENs for changes in control equipment must be submitted before the change occurs. Annual fees are based on the most recent APEN on file with the Division.

23. Reopenings for Cause

Regulation No. 3, 5 CCR 1001-5, Part C, § XIII.

- a. The Air Pollution Control Division shall reopen, revise, and reissue Operating Permits; permit reopenings and reissuance shall be processed using the procedures set forth in Regulation No. 3, Part C, § III., except that proceedings to reopen and reissue permits affect only those parts of the permit for which cause to reopen exists.
- b. The Division shall reopen a permit whenever additional applicable requirements become applicable to a major source with a remaining permit term of three or more years, unless the effective date of the requirements is later than the date on which the permit expires, or unless a general permit is obtained to address the new requirements; whenever additional requirements (including excess emissions requirements) become applicable to an affected source under the acid rain program; whenever the Division determines the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit; or whenever the Division determines that the permit must be revised or revoked to assure compliance with an applicable requirement.

Operating Permit Number: 04OPJE272 Issued: 4/1/10

- c. The Division shall provide 30 days' advance notice to the permittee of its intent to reopen the permit, except that a shorter notice may be provided in the case of an emergency.
- d. The permit shield shall extend to those parts of the permit that have been changed pursuant to the reopening and reissuance procedure.

24. Section 502(b)(10) Changes

Regulation No. 3, 5 CCR 1001-5, Part C, § XII.A.

The permittee shall provide a minimum 7-day advance notification to the Air Pollution Control Division and to the Environmental Protection Agency at the addresses listed in Appendix D of this Permit. The permittee shall attach a copy of each such notice given to its Operating Permit.

25. Severability Clause

Regulation No. 3, 5 CCR 1001-5, Part C, § V.C.10.

In the event of a challenge to any portion of the permit, all emissions limits, specific and general conditions, monitoring, record keeping and reporting requirements of the permit, except those being challenged, remain valid and enforceable.

26. Significant Permit Modifications

Regulation No. 3, 5 CCR 1001-5, Part C, § III.B.2.

The permittee shall not make a significant modification required to be reviewed under Regulation No. 3, Part B ("Construction Permit" requirements) without first receiving a construction permit. The permittee shall submit a complete Operating Permit application or application for an Operating Permit revision for any new or modified source within twelve months of commencing operation, to the address listed in Item 1 in Appendix D of this permit. If the permittee chooses to use the "Combined Construction/Operating Permit" application procedures of Regulation No. 3, Part C, then the Operating Permit must be received prior to commencing construction of the new or modified source.

27. Special Provisions Concerning the Acid Rain Program

Regulation No. 3, 5 CCR 1001-5, Part C, §§ V.C.1.b. & 8

- a. Where an applicable requirement of the federal act is more stringent than an applicable requirement of regulations promulgated under Title IV of the federal act, 40 Code of Federal Regulations (CFR) Part 72, both provisions shall be incorporated into the permit and shall be federally enforceable.
- b. Emissions exceeding any allowances that the source lawfully holds under Title IV of the federal act or the regulations promulgated thereunder, 40 CFR Part 72, are expressly prohibited.

28. Transfer or Assignment of Ownership

Regulation No. 3, 5 CCR 1001-5, Part C, § II.C.

No transfer or assignment of ownership of the Operating Permit source will be effective unless the prospective owner or operator applies to the Air Pollution Control Division on Division-supplied Administrative Permit Amendment forms, for reissuance of the existing Operating Permit. No administrative permit shall be complete until a written agreement containing a specific date for transfer of permit, responsibility, coverage, and liability between the permittee and the prospective owner or operator has been submitted to the Division.

Operating Permit Number: 04OPJE272 Issued: 4/1/10

29. Volatile Organic Compounds

Regulation No. 7, 5 CCR 1001-9, §§ III & V.

The requirements in paragraphs a, b and e apply to sources located in an ozone non-attainment area or the Denver 1-hour ozone attainment/maintenance area. The requirements in paragraphs c and d apply statewide.

- a. All storage tank gauging devices, anti-rotation devices, accesses, seals, hatches, roof drainage systems, support structures, and pressure relief valves shall be maintained and operated to prevent detectable vapor loss except when opened, actuated, or used for necessary and proper activities (e.g. maintenance). Such opening, actuation, or use shall be limited so as to minimize vapor loss.
 - Detectable vapor loss shall be determined visually, by touch, by presence of odor, or using a portable hydrocarbon analyzer. When an analyzer is used, detectable vapor loss means a VOC concentration exceeding 10,000 ppm. Testing shall be conducted as in Regulation No. 7, Section VIII.C.3.
- b. Except when otherwise provided by Regulation No. 7, all volatile organic compounds, excluding petroleum liquids, transferred to any tank, container, or vehicle compartment with a capacity exceeding 212 liters (56 gallons), shall be transferred using submerged or bottom filling equipment. For top loading, the fill tube shall reach within six inches of the bottom of the tank compartment. For bottom-fill operations, the inlet shall be flush with the tank bottom.
- c. The permittee shall not dispose of volatile organic compounds by evaporation or spillage unless Reasonably Available Control Technology (RACT) is utilized.
- d. No owner or operator of a bulk gasoline terminal, bulk gasoline plant, or gasoline dispensing facility as defined in Colorado Regulation No. 7, Section VI, shall permit gasoline to be intentionally spilled, discarded in sewers, stored in open containers, or disposed of in any other manner that would result in evaporation.
- e. Beer production and associated beer container storage and transfer operations involving volatile organic compounds with a true vapor pressure of less than 1.5 PSIA actual conditions are exempt from the provisions of paragraph b, above.

30. Wood Stoves and Wood burning Appliances

Regulation No. 4, 5 CCR 1001-6

The permittee shall comply with the provisions of Regulation No. 4 concerning the advertisement, sale, installation, and use of wood stoves and wood burning appliances.

Operating Permit Number: 04OPJE272 Issued: 4/1/10

OPERATING PERMIT APPENDICES

- A INSPECTION INFORMATION
- **B- MONITORING AND PERMIT DEVIATION REPORT**
- C COMPLIANCE CERTIFICATION REPORT
- D NOTIFICATION ADDRESSES
- E PERMIT ACRONYMS
- F PERMIT MODIFICATIONS
- G WARTSILA ENGINE HAP EMISSION FACTORS
- H PORTABLE MONITORING ANNUAL EMISSIONS LIMITATIONS MONITORING METHOD

*DISCLAIMER:

None of the information found in these Appendices shall be considered to be State or Federally enforceable, except as otherwise provided in the permit, and is presented to assist the source, permitting authority, inspectors, and citizens.

Operating Permit Number: 04OPJE272 Issued: 4/1/10

APPENDIX A - Inspection Information

Directions to Plant

The facility is located at 8950 Highway 93 (~ 1 mile south of the intersection of Highway 72 and 93), in Arvada, CO.

Safety Equipment Required

Eye Protection, Hard Hat, Safety Shoes and Hearing Protection

Facility Plot Plan

Figures 1 and 2 (following pages) show the plot plans as submitted on October 7, 2008 with the source's revised Title V Operating Permit Application.

List of Insignificant Activities

The following list of insignificant activities was provided by the source to assist in the understanding of the facility layout. Since there is no requirement to update such a list, activities may have changed since the last filing.

Insignificant activities and/or sources of emissions as identified in the Title V permit application:

Fuel (gaseous) burning equipment < 5 MMBtu/hr (Reg 3, Part C.II.E.3.k)

Fuel gas heater 1.9 MMBtu/hr (H1) Fuel gas heater 1.9 MMBtu/hr (H2)

Twenty-one (21) space heaters – each at 0.252 MMBtu/hr

Lube oil tanks < 40,000 gal (Reg 3, Part C.II.3.aaa)

Three (3) lube oil storage tanks

Operating Permit Number: 04OPJE272 Issued: 4/1/10

Operating Permit Number: 04OPJE272 Issued: 4/1/10

APPENDIX B

Reporting Requirements and Definitions

with codes ver 2/20/07

Please note that, pursuant to 113(c)(2) of the federal Clean Air Act, any person who knowingly:

- (A) makes any false material statement, representation, or certification in, or omits material information from, or knowingly alters, conceals, or fails to file or maintain any notice, application, record, report, plan, or other document required pursuant to the Act to be either filed or maintained (whether with respect to the requirements imposed by the Administrator or by a State);
- (B) fails to notify or report as required under the Act; or
- (C) falsifies, tampers with, renders inaccurate, or fails to install any monitoring device or method required to be maintained or followed under the Act shall, upon conviction, be punished by a fine pursuant to title 18 of the United States Code, or by imprisonment for not more than 2 years, or both. If a conviction of any person under this paragraph is for a violation committed after a first conviction of such person under this paragraph, the maximum punishment shall be doubled with respect to both the fine and imprisonment.

The permittee must comply with all conditions of this operating permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

The Part 70 Operating Permit program requires three types of reports to be filed for all permits. All required reports must be certified by a responsible official.

Report #1: Monitoring Deviation Report (due at least every six months)

For purposes of this operating permit, the Division is requiring that the monitoring reports are due every six months unless otherwise noted in the permit. All instances of deviations from permit monitoring requirements must be clearly identified in such reports.

For purposes of this operating permit, monitoring means any condition determined by observation, by data from any monitoring protocol, or by any other monitoring which is required by the permit as well as the recordkeeping associated with that monitoring. This would include, for example, fuel use or process rate monitoring, fuel analyses, and operational or control device parameter monitoring.

Report #2: Permit Deviation Report (must be reported "promptly")

In addition to the monitoring requirements set forth in the permits as discussed above, each and every requirement of the permit is subject to deviation reporting. The reports must address deviations from permit requirements, including those attributable to malfunctions as defined in this Appendix, the probable cause of

Operating Permit Number: 04OPJE272 Issued: 4/1/10

such deviations, and any corrective actions or preventive measures taken. All deviations from any term or condition of the permit are required to be summarized or referenced in the annual compliance certification.

For purposes of this operating permit, "malfunction" shall refer to both emergency conditions and malfunctions. Additional discussion on these conditions is provided later in this Appendix.

For purposes of this operating permit, the Division is requiring that the permit deviation reports are due as set forth in General Condition 21. Where the underlying applicable requirement contains a definition of prompt or otherwise specifies a time frame for reporting deviations, that definition or time frame shall govern. For example, quarterly Excess Emission Reports required by an NSPS or Regulation No. 1, Section IV.

In addition to the monitoring deviations discussed above, included in the meaning of deviation for the purposes of this operating permit are any of the following:

- (1) A situation where emissions exceed an emission limitation or standard contained in the permit;
- (2) A situation where process or control device parameter values demonstrate that an emission limitation or standard contained in the permit has not been met;
- (3) A situation in which observations or data collected demonstrates noncompliance with an emission limitation or standard or any work practice or operating condition required by the permit; or,
- (4) A situation in which an excursion or exceedance as defined in 40CFR Part 64 (the Compliance Assurance Monitoring (CAM) Rule) has occurred. (only if the emission point is subject to CAM)

For reporting purposes, the Division has combined the Monitoring Deviation Report with the Permit Deviation Report. All deviations shall be reported using the following codes:

1 = Standard: When the requirement is an emission limit or standard 2 = Process: When the requirement is a production/process limit

3 = Monitor: When the requirement is monitoring4 = Test: When the requirement is testing

5 = Maintenance: When required maintenance is not performed
 6 = Record: When the requirement is recordkeeping
 7 = Report: When the requirement is reporting

8 = CAM: A situation in which an excursion or exceedance as defined in 40CFR Part 64 (the

Compliance Assurance Monitoring (CAM) Rule) has occurred.

9 = Other: When the deviation is not covered by any of the above categories

Report #3: Compliance Certification (annually, as defined in the permit)

Submission of compliance certifications with terms and conditions in the permit, including emission limitations, standards, or work practices, is required not less than annually.

Compliance Certifications are intended to state the compliance status of each requirement of the permit over the certification period. They must be based, at a minimum, on the testing and monitoring methods specified in the

Operating Permit Number: 04OPJE272 Issued: 4/1/10

permit that were conducted during the relevant time period. In addition, if the owner or operator knows of other material information (i.e. information beyond required monitoring that has been specifically assessed in relation to how the information potentially affects compliance status), that information must be identified and addressed in the compliance certification. The compliance certification must include the following:

- The identification of each term or condition of the permit that is the basis of the certification;
- Whether or not the method(s) used by the owner or operator for determining the compliance status with each permit term and condition during the certification period was the method(s) specified in the permit. Such methods and other means shall include, at a minimum, the methods and means required in the permit. If necessary, the owner or operator also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Federal Clean Air Act, which prohibits knowingly making a false certification or omitting material information;
- The status of compliance with the terms and conditions of the permit, and whether compliance was continuous or intermittent. The certification shall identify each deviation and take it into account in the compliance certification. Note that not all deviations are considered violations.
- Such other facts as the Division may require, consistent with the applicable requirements to which the source is subject, to determine the compliance status of the source.

The Certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion or exceedance as defined under 40 CFR Part 64 (the Compliance Assurance Monitoring (CAM) Rule) has occurred. (only for emission points subject to CAM)

Note the requirement that the certification shall identify each deviation and take it into account in the compliance certification. Previously submitted deviation reports, including the deviation report submitted at the time of the annual certification, may be referenced in the compliance certification.

Startup, Shutdown, Malfunctions and Emergencies

Understanding the application of Startup, Shutdown, Malfunctions and Emergency Provisions, is very important in both the deviation reports and the annual compliance certifications.

Startup, Shutdown, and Malfunctions

Please note that exceedances of some New Source Performance Standards (NSPS) and Maximum Achievable Control Technology (MACT) standards that occur during Startup, Shutdown or Malfunctions may not be considered to be non-compliance since emission limits or standards often do not apply unless specifically stated in the NSPS. Such exceedances must, however, be reported as excess emissions per the NSPS/MACT rules and

¹ For example, given the various emissions limitations and monitoring requirements to which a source may be subject, a deviation from one requirement may not be a deviation under another requirement which recognizes an exception and/or special circumstances relating to that same event.

would still be noted in the deviation report. In regard to compliance certifications, the permittee should be confident of the information related to those deviations when making compliance determinations since they are subject to Division review. The concepts of Startup, Shutdown and Malfunctions also exist for Best Available Control Technology (BACT) sources, but are not applied in the same fashion as for NSPS and MACT sources.

Emergency Provisions

Under the Emergency provisions of Part 70 certain operational conditions may act as an affirmative defense against enforcement action if they are properly reported.

DEFINITIONS

Malfunction (NSPS) means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

Malfunction (SIP) means any sudden and unavoidable failure of air pollution control equipment or process equipment or unintended failure of a process to operate in a normal or usual manner. Failures that are primarily caused by poor maintenance, careless operation, or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.

Emergency means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

Operating Permit Number: 04OPJE272 Issued: 4/1/10

Monitoring and Permit Deviation Report - Part I

- 1. Following is the **required** format for the Monitoring and Permit Deviation report to be submitted to the Division as set forth in General Condition 21. The Table below must be completed for all equipment or processes for which specific Operating Permit terms exist.
- 2. Part II of this Appendix B shows the format and information the Division will require for describing periods of monitoring and permit deviations, or malfunction or emergency conditions as indicated in the Table below. One Part II Form must be completed for each Deviation. Previously submitted reports (e.g. EER's or malfunctions) may be referenced and the form need not be filled out in its entirety.

FACILITY NAME: Plains End LLC – Pla	ins End Generating Station
OPERATING PERMIT NO: 040PJE272	
REPORTING PERIOD:	(see first page of the permit for specific reporting period and dates)

Operating Permit Unit		Deviation During P		Deviation Code ²	Malfur Emerg Condition During	gency Reported
ID	Unit Description	YES	NO		YES	NO
E01 - E20	Twenty (20) Wartsila, Model No. 18VG34SG, Natural Gas Fired Internal Combustion Engines Driving Electric Generators, Each Engine Rated at 54.2 MMBtu/hr and 7,900 HP, Serial Nos. 21350 through 21369. Each Generator Rated at 5,650 kW.					
E21 – E34	Fourteen (14) Wartsila, Model No. 20V34SG, Natural Gas Fired Internal Combustion Engines Driving Electric Generators, Each Engine Rated at 73.6 MMBtu/hr and 11,352 hp, Serial Nos, PAAE063701, 063703 – 063705, 063707 – 063712, 063717, 063721, 063722 & 063726. Each Generator Rated at 8,439 kW.					
E35	Cummins, Model No. QSX15-G9, Internal Combustion Engine, Serial No. 79274049 Driving a Cummins 350DFEG Electric Generator (350 kW). The Engine is Diesel Fuel-Fired and Rated at 755 hp and 3.3 MMBtu/hr. This unit is used to start the Wartsila engines when power at the facility is lost.					
E36	John Deere, Model No. 6068TF220, Diesel Fuel- Fired Emergency Fire Pump Engine, Rated at 149 hp (9.5 gal/hr), Serial No. PE6068T696483					
	General Conditions					
1	Insignificant Activities					

¹ See previous discussion regarding what is considered to be a deviation. Determination of whether or not a deviation has occurred shall be based on a reasonable inquiry using readily available information.

Operating Permit Number: 04OPJE272

Issued: 4/1/10
Last Revised: 2/14/12

² Use the following entries, as appropriate:

1 = Standard: When the requirement is an emission limit or standard 2 = Process: When the requirement is a production/process limit

3 = Monitor: When the requirement is monitoring 4 = Test: When the requirement is testing

5 = Maintenance: When required maintenance is not performed
 6 = Record: When the requirement is recordkeeping
 7 = Report: When the requirement is reporting

8 = CAM: A situation in which an excursion or exceedance as defined in 40CFR Part 64 (the Compliance Assurance

Monitoring (CAM) Rule) has occurred.

9 = Other: When the deviation is not covered by any of the above categories

Operating Permit Number: 04OPJE272 Issued: 4/1/10

FACILITY NAME:

Monitoring and Permit Deviation Report - Part II

Plains End LLC – Plains End Generating Station

REPORTING PERIOD:			
Is the deviation being claimed as an:	Emergency	Malfunction	N/A
(For NSPS/MACT) Did the deviation occur during:	Startup Normal Operation	Shutdown	Malfunction
OPERATING PERMIT UNIT IDENTIFICATION:			
Operating Permit Condition Number Citation			
Explanation of Period of Deviation			
Duration (start/stop date & time)			
Action Taken to Correct the Problem			
Measures Taken to Prevent a Reoccurrence of the Pr	<u>roblem</u>		
Dates of Malfunctions/Emergencies Reported (if app	olicable)		
Deviation Code	Division Code QA:		

Operating Permit Number: 04OPJE272 Issued: 4/1/10

SEE EXAMPLE ON THE NEXT PAGE

FACILITY NAME:

Acme Corp.

EXAMPLE

OPERATING PERMIT NO: 96OPZZXXX REPORTING PERIOD: 1/1/04 - 6/30/06			
Is the deviation being claimed as an:	Emergency	Malfunction _	XX N/A
(For NSPS/MACT) Did the deviation occur during:	Startup Normal Operation	Shutdown	Malfunction
OPERATING PERMIT UNIT IDENTIFICATION:			
Asphalt Plant with a Scrubber for Particulate Contro	l - Unit XXX		
Operating Permit Condition Number Citation			
Section II, Condition 3.1 - Opacity Limitation			
Explanation of Period of Deviation			
Slurry Line Feed Plugged			
<u>Duration</u>			
START- 1730 4/10/06 END- 1800 4/10/06			
Action Taken to Correct the Problem			
Line Blown Out			
Measures Taken to Prevent Reoccurrence of the Pro	<u>blem</u>		
Replaced Line Filter			
Dates of Malfunction/Emergencies Reported (if appl	icable)		
5/30/06 to A. Einstein, APCD			
Deviation Code	Division Code QA:		

Operating Permit Number: 04OPJE272 Issued: 4/1/10

Monitoring and Permit Deviation Report - Part III

REPORT CERTIFICATION

ER: 0590864	
(see first page of the permit for specific reporting period and date	es)
art A, Section I.B.38. This signed certification document must be	
•	al
rial statement, representation, or certification in this document is	
Title	
Title Sible Official Date Signed	
t t	(see first page of the permit for specific reporting period and date nual Deviation Reports must be certified by a responsible official as art A, Section I.B.38. This signed certification document must be mitted.

Issued: 4/1/10Operating Permit Number: 04OPJE272

APPENDIX C

Required Format for Annual Compliance Certification Report

with codes ver 2/20/07

Following is the format for the Compliance Certification report to be submitted to the Division and the U.S. EPA annually based on the effective date of the permit. The Table below must be completed for all equipment or processes for which specific Operating Permit terms exist.

FACILITY NAME: Plains End LLC – Plains End Generating Station

OPERATING PERMIT NO: 040PJE272 REPORTING PERIOD:

I. Facility Status

During the entire reporting period, this source was in compliance with ALL terms and conditions contained	эd
in the Permit, each term and condition of which is identified and included by this reference. The method(s)	
used to determine compliance is/are the method(s) specified in the Permit.	

____ With the possible exception of the deviations identified in the table below, this source was in compliance with all terms and conditions contained in the Permit, each term and condition of which is identified and included by this reference, during the entire reporting period. The method used to determine compliance for each term and condition is the method specified in the Permit, unless otherwise indicated and described in the deviation report(s). Note that not all deviations are considered violations.

Operating Permit Unit ID	Unit Description	Devia Repo		Metho	toring od per nit? ²	Contin	mpliance uous or ittent? ³
		Previous	Current	YES	NO	Continuous	Intermittent
E01 - E20	Twenty (20) Wartsila, Model No. 18VG34SG, Natural Gas Fired Internal Combustion Engines Driving Electric Generators, Each Engine Rated at 54.2 MMBtu/hr and 7,900 HP, Serial Nos. 21350 through 21369. Each Generator Rated at 5,650 kW.						
E21 – E34	Fourteen (14) Wartsila, Model No. 20V34SG, Natural Gas Fired Internal Combustion Engines Driving Electric Generators, Each Engine Rated at 73.6 MMBtu/hr and 11,352 hp, Serial Nos, PAAE063701, 063703 – 063705, 063707 – 063712, 063717, 063721, 063722 & 063726. Each Generator Rated at 8,439 kW.						

Operating Permit Number: 04OPJE272 Issued: 4/1/10

Operating Permit Unit ID	Unit Description	Devia Repo		Metho	toring od per mit? ²	Contin	mpliance uous or ittent? ³
		Previous	Current	YES	NO	Continuous	Intermittent
E35	Cummins, Model No. QSX15-G9, Internal Combustion Engine, Serial No. 79274049 Driving a Cummins 350DFEG Electric Generator (350 kW). The Engine is Diesel Fuel-Fired and Rated at 755 hp and 3.3 MMBtu/hr. This unit is used to start the Wartsila engines when power at the facility is lost.						
E36	John Deere, Model No. 6068TF220, Diesel Fuel-Fired Emergency Fire Pump Engine, Rated at 149 hp (9.5 gal/hr), Serial No. PE6068T696483						
	General Conditions						
	Insignificant Activities 4						

If deviations were noted in a previous deviation report, put an "X" under "previous". If deviations were noted in the current deviation report (i.e. for the last six months of the annual reporting period), put an "X" under "current". Mark both columns if both apply.

NOTE:

The Periodic Monitoring requirements of the Operating Permit program rule are intended to provide assurance that even in the absence of a continuous system of monitoring the Title V source can demonstrate whether it has operated in continuous compliance for the duration of the reporting period. Therefore, if a source 1) conducts all of the monitoring and recordkeeping required in its permit, even if such activities are done periodically and not continuously, and if 2) such monitoring and recordkeeping does not indicate non-compliance, and if 3) the Responsible Official is not aware of any credible evidence that indicates non-compliance, then the Responsible Official can certify that the emission point(s) in question were in continuous compliance during the applicable time period.

Operating Permit Number: 04OPJE272 Issued: 4/1/10

² Note whether the method(s) used to determine the compliance status with each term and condition was the method(s) specified in the permit. If it was not, mark "no" and attach additional information/explanation.

³ Note whether the compliance status with of each term and condition provided was continuous or intermittent. "Intermittent Compliance" can mean either that noncompliance has occurred or that the owner or operator has data sufficient to certify compliance only on an intermittent basis. Certification of intermittent compliance therefore does not necessarily mean that any noncompliance has occurred.

⁴ Compliance status for these sources shall be based on a reasonable inquiry using readily available information.

II.	Status	for Accidental Release Prevention Program:	
	A.	This facility is subject is not su Release Prevention Program (Section 112(r) of the	bject to the provisions of the Accidental Federal Clean Air Act)
	В.	If subject: The facility is requirements of section 112(r).	_ is not in compliance with all the
		1. A Risk Management Plan will be appropriate authority and/or the designated	
III.	Certif	ication	
Colora	ado Reg	on for the Annual Compliance Certification must be gulation No. 3, Part A, Section I.B.38. This signed cas being submitted.	* *
reason	nable ir	ved this certification in its entirety and, based on inquiry, I certify that the statements and informating complete.	
C.R.S	., make	hat the Colorado Statutes state that any person wes any false material statement, representation, or r and may be punished in accordance with the pro-	certification in this document is guilty of a
		Printed or Typed Name	Title
		Signature	Date Signed
		ompliance certifications shall be submitted to the Air al Protection Agency at the addresses listed in Appen	

Operating Permit Number: 04OPJE272 Issued: 4/1/10

APPENDIX D

Notification Addresses

1. Air Pollution Control Division

Colorado Department of Public Health and Environment Air Pollution Control Division Operating Permits Unit APCD-SS-B1 4300 Cherry Creek Drive S. Denver, CO 80246-1530

ATTN: Matt Burgett

2. United States Environmental Protection Agency

Compliance Notifications:

Office of Enforcement, Compliance and Environmental Justice Mail Code 8ENF-T U.S. Environmental Protection Agency, Region VIII 1595 Wynkoop Street Denver, CO 80202-1129

Permit Modifications, Off Permit Changes:

Office of Partnerships and Regulatory Assistance Air and Radiation Programs, 8P-AR U.S. Environmental Protection Agency, Region VIII 1595 Wynkoop Street Denver, CO 80202-1129

Operating Permit Number: 04OPJE272 Issued: 4/1/10

APPENDIX E

Permit Acronyms

Listed Alphabetically:

AIRS -	Aerometric Information Retrieval System
AP-42-	EPA Document Compiling Air Pollutant Emission Factors
APEN -	Air Pollution Emission Notice (State of Colorado)
APCD -	Air Pollution Control Division (State of Colorado)
ASTM -	American Society for Testing and Materials
BACT -	Best Available Control Technology
BTU -	British Thermal Unit
CAA -	Clean Air Act (CAAA = Clean Air Act Amendments)
CCR -	Colorado Code of Regulations
CEM -	Continuous Emissions Monitor
CF -	Cubic Feet (SCF = Standard Cubic Feet)
CFR -	Code of Federal Regulations
CO -	Carbon Monoxide
COM -	Continuous Opacity Monitor
CRS -	Colorado Revised Statute
EF -	Emission Factor
EPA -	Environmental Protection Agency
FI -	Fuel Input Rate in MMBtu/hr
FR -	Federal Register
G -	Grams
Gal -	Gallon
GPM -	Gallons per Minute
HAPs -	Hazardous Air Pollutants
HP -	Horsepower
HP-HR -	Horsepower Hour ($G/HP-HR = Grams per Horsepower Hour$)
LAER -	Lowest Achievable Emission Rate
LBS -	Pounds
M -	Thousand
MM -	Million
MMscf -	Million Standard Cubic Feet
MMscfd -	Transfer a continuate a contract of part and
N -	Normal Operation, as referenced in permit limitation table in Section II.1
NT/A NTA	NT . A 11 1.1

NESHAP - National Emission Standards for Hazardous Air Pollutants

NSPS - New Source Performance Standards P - Process Weight Rate in Tons/Hr

Nitrogen Oxides

PE - Particulate Emissions PM - Particulate Matter

N/A or NA - Not Applicable

 NO_X -

Operating Permit Number: 04OPJE272 Issued: 4/1/10

PM₁₀ -Particulate Matter Under 10 Microns PPM -Parts Per Million Parts Per Million, by Volume PPMV -Parts per Million, by Volume, Dry PPMVD -PSD -Prevention of Significant Deterioration PTE -Potential To Emit Reasonably Available Control Technology RACT -Source Classification Code SCC -SCF -Standard Cubic Feet Shutdown, as referenced in permit limitation table in Section II.1 SD -SIC -Standard Industrial Classification SO_2 -Sulfur Dioxide Start-Up, as referenced in permit limitation table in Section II.1 SU -

TPY - Tons Per Year
TSP - Total Suspended Partic

TSP - Total Suspended Particulate VOC - Volatile Organic Compounds

Operating Permit Number: 04OPJE272 Issued: 4/1/10

APPENDIX F

Permit Modifications

DATE OF REVISION	MODIFICATION TYPE	SECTION NUMBER, CONDITION NUMBER	DESCRIPTION OF REVISION
February 14, 2012	Significant Modification	Page Following Cover Page	Revised the responsible official. Replaced the responsible official's authorized representative with the alternate responsible official. Changed the address under "issued to" and under "plant site location" replaced "Golden" with "Arvada".
		Section II.1	Condition 1.1.1 was revised to correct the reference to another permit condition. Revised Condition 1.4.2 to indicate that the NO _X RACT limit does not apply during periods of startup and shutdown and added definitions of those events. Revised the table for Condition 1.5 to specify that the requirements apply to HAP emissions, refer to Condition 1.5 for emission factors and specify that performance testing is for formaldehyde. In addition, the text portion in Condition 1.5 was revised to include a list of emission factors for relevant HAPs. Added "new" condition 1.8.2.1 to address urea injection. Minor language changes were made in Conditions 1.8.1 and "old" Condition 1.8.2.1 to address recordkeeping & good engineering practices. "Old" Conditions 1.8.2.2 through 1.8.2.4 were reformatted and renumbered as Conditions 1.8.2.2.a through c. Included the requirements in 40 CFR Part 63 Subpart ZZZZ to Condition 1.14.
		Section II.2	Conditions 2.1.1 and 2.2.1 were revised to correct the references to other permit conditions. Revised Condition 1.4.2 to indicate that the NO _X RACT limit does not apply during periods of startup and shutdown and added definitions of those events. Revised the table for Condition 1.5 to specify that the requirements apply to HAP emissions, refer to Condition 1.5 for emission factors and specify that performance testing is for formaldehyde. In addition, the text portion in Condition 2.5 was revised to include a list of emission factors for relevant HAPs. Added "new" condition 1.8.2.1 to address urea injection. Minor language changes were made in Conditions 1.8.1 and "old" Condition 1.8.2.1 to address recordkeeping & good engineering practices. "Old" Conditions 1.8.2.2 through 1.8.2.4 were reformatted and renumbered as Conditions 1.8.2.2.a through c.
		Section II.3	Added MACT ZZZZ requirements to Condition 3.7. The opacity monitoring language (Conditions 3.53 through 3.5.8) was revised.
		Section II.4	Added MACT ZZZZ requirements to Condition 4.6. The opacity monitoring language (Conditions 3.53 through 3.5.8) was revised.

Operating Permit Number: 04OPJE272 Issued: 4/1/10

DATE OF REVISION	MODIFICATION TYPE	SECTION NUMBER, CONDITION NUMBER	DESCRIPTION OF REVISION
February 14, 2012	Significant Modification	Section II.7	Removed the requirement in Condition 7.1 to calculate HAP emissions from the emergency generator and fire pump engine. In addition, Condition 7.1 was revised to refer HAP calculations for the Plains End I and Plains End II engines to Conditions 1.5 and 2.5 of the permit and to clarify the compliance monitoring methods for individual and combined HAPs.
		Section IV	General Condition 29 (VOC) was revised by reformatting and adding the provisions in Reg 7, Section III.C as paragraph e.
		Appendices	Under "directions to plant" in Appendix A replaced "Golden" with "Arvada". Changed the Division contact for reports in Appendix D.

Operating Permit Number: 04OPJE272 Issued: 4/1/10

APPENDIX G
Wartsila Engine HAP Emission Factors

		Plains End 1	Plains End 2
	AP-42 Ratio	Emission Factor	Emission Factor
Pollutant	(fraction of total HAPS)	(lb/MMBtu)	(lb/MMBtu)
1,1,2,2 - tetrachloroethane	5.54E-04	1.14E-06	7.41E-07
1,1,2 – trichloroethane	4.40E-04	9.07E-07	5.89E-07
1,3 – butadiene	3.70E-03	7.61E-06	4.95E-06
1,3 – dichloropropene	3.66E-04	7.53E-07	4.89E-07
2 – methylnaphthalene	4.60E-04	9.47E-07	6.15E-07
2,2,4 - trimethylpentane	3.46E-03	7.13E-06	4.63E-06
Acenaphthene	1.73E-05	3.56E-08	2.32E-08
Acenaphthylene	7.66E-05	1.58E-07	1.02E-07
Acetaldehyde	1.16E-01	2.38E-04	1.55E-04
Acrolein	7.12E-02	1.47E-04	9.52E-05
Benzene	6.09E-03	1.25E-05	8.15E-06
benzo(b)fluoranthene	2.30E-06	4.73E-09	3.08E-09
benzo(e)pyrene	5.75E-06	1.18E-08	7.69E-09
benzo(g,h,I)perlyene	5.73E-06	1.18E-08	7.67E-09
Biphenyl	2.94E-03	6.04E-06	3.93E-06
carbon tetratchloride	5.08E-04	1.05E-06	6.80E-07
Chlorobenzene	4.21E-04	8.67E-07	5.63E-07
Chloroform	3.95E-04	8.13E-07	5.28E-07
Chrysene	9.60E-06	1.98E-08	1.28E-08
Ethylbenzene	5.50E-04	1.13E-06	7.36E-07
ethylene dibromide	6.14E-04	1.26E-06	8.21E-07
Fluoranthene	1.54E-05	3.17E-08	2.06E-08
Fluorine	7.85E-05	1.62E-07	1.05E-07
Formaldehyde	7.31E-01	1.51E-03	9.78E-04
Methanol	3.46E-02	7.13E-05	4.63E-05
mehylene chloride	2.77E-04	5.70E-07	3.71E-07
n-hexane	1.54E-02	3.17E-05	2.06E-05
Naphthalene	1.03E-03	2.12E-06	1.38E-06
PAH	3.73E-04	7.67E-07	4.98E-07
Phenanthrene	1.44E-04	2.97E-07	1.93E-07
Phenol	3.32E-04	6.84E-07	4.45E-07
Pyrene	1.88E-05	3.88E-08	2.52E-08
Styrene	3.27E-04	6.73E-07	4.37E-07
Tetrachloroethane	3.44E-05	7.07E-08	4.59E-08
Toluene	5.65E-03	1.16E-05	7.56E-06
vinyl chloride	2.06E-04	4.25E-07	2.76E-07
Xylene	2.55E-03	5.25E-06	3.41E-06

Operating Permit Number: 04OPJE272

Issued: 4/1/10
Last Revised: 2/14/12

The above emission factors are based on the following formaldehyde emission rates: Plains End I -0.0816 lbs/hr (maximum test result multiplied by 1.2) and Plains End II -0.072 lbs/hr (average test result multiplied by 5). The above emission factors shall be recalculated if a performance test on any engine indicates that formaldehyde emissions exceeds these emission rates. New emission factors shall be calculated as follows:

A total HAP emission rate (in lbs/hr) shall be calculated by dividing the formaldehyde test result by the appropriate AP-42 ratio. Individual HAP emission rates (in lbs/hr) will then be calculated by multiplying the total HAP emission rate (in lbs/hr) by its respective AP-42 ratio. Individual HAP emission rates (in lbs/hr) will be divided by the design heat input rate (MMBtu/hr) of the engine to get the individual HAP emission factor (in units of lb/MMBtu).

Operating Permit Number: 04OPJE272 Issued: 4/1/10

APPENDIX H

Portable Monitoring Annual Emissions Limitations Monitoring Method

The results of the portable monitoring tests conducted on the Plains End I and Plains End II (required by Section II, Condition 1.10 and 2.10 of this permit) shall be used in the following manner to monitor compliance with the annual NO_X and CO emissions limitations:

- A. The portable monitoring results from each engine shall be converted to units of lb/MMBtu.
- B. Hours of operation from each engine for the semi-annual period shall be determined.
- C. An operating hours ratio shall be determined for each engine by dividing the hours a given engine operated over the semi-annual period by the total hours of operation for all engines in that operating group (i.e., either the Plains End I or Plains End II engines). An example calculation is shown below:

Operating hours ratio (OHR) = <u>E01 operating hours</u>
Sum of operating hours for E01 through E20

D. Estimated annual emissions for a given engine shall be calculated by multiplying the portable monitoring results (in lb/MMBtu) by the operating hours ratio, the permitted fuel consumption rate for the engines in that operating group and the heat content of the fuel and dividing by 2000 (to convert from lbs/yr to tons/yr). An example calculation is shown below.

 $E01 (tons/yr) = \underline{monitoring \ results \ (lb/MMBtu) \ x \ OHR \ x \ 6912 \ \underline{MMscf/yr \ x \ heat \ content \ of \ natural \ gas \ (\underline{MMBtu/MMscf})}}{2000 \ lbs/ton}$

E. Total estimated annual emissions for a given operating group shall be determined by summing the estimated annual emissions for all engines in that operating group.

Operating Permit Number: 04OPJE272 Issued: 4/1/10